

Cavalry Transformation: Are We Shooting the Horse Too Soon?

**A Monograph
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Abstract

Cavalry Transformation: Are We Shooting the Horse Too Soon? by Major Louis B. Rago, II, United States Army, 67 pages.

The transformation of the Army from its current “legacy” structure to the Objective Force is predicated on the realization of significant technological advances and the evolution of a “general-purpose” combat force. Today’s forces, “Legacy Forces” in the transformation lexicon, are highly dependent upon specially trained and equipped cavalry organizations. Currently, cavalry units provide robust capabilities for reconnaissance, surveillance and security along with ground combat capabilities commanders may use in economy of force roles. Simultaneously, the transformation of armored cavalry units to Interim Force Reconnaissance, Surveillance and Target Acquisition (RSTA) organizations will significantly diminish the organization’s capability to independently execute the traditional cavalry tasks requiring contact with an enemy force. The current transformation plan culminates with fielding of the Objective Force Unit of Action and the likely elimination of specialized cavalry forces. Reconnaissance and surveillance tasks are assumed by ISR-suite equipped platforms while force-oriented tasks are executed by Future Combat System (FCS) equipped general-purpose units. As the transformation progresses through the Interim Force and eventually to the Objective Force, the current doctrinal and organizational foundation of cavalry diminishes then disappears.

The consequences of military failure in future conflict are obviously dangerous and potentially catastrophic. According to Cohen and Gooch, failure to learn is one of the most common types of military failure. The analysis of the critical assumptions related to the future of cavalry highlights the current transformation’s possible failure due to an overreliance on technology.

The RSTA squadron of the Interim Force has been organized to operate using the expected, but not yet available, technologies capable of meeting the traditional cavalry roles in the Objective Force. In the case of the United States Army’s transformation and its decisions involving the future of cavalry a learning failure is becoming evident. The concepts for the Objective Force and the organization of its interim cavalry force seem to ignore the historical lessons learned on the limitations of technology in combat. Another potentially critical failure is a failure to anticipate. This assumption that the US will maintain technological superiority over all potential adversaries is also reflected in the organization of Interim Force Cavalry units or RSTA squadrons. A potentially more catastrophic type of military failure is the failure to adapt. The potential for a failure of adaptation increases.

Beyond the purely tactical potential for adaptation failure is the potential for force wide failure from lack of training and experience. Although military failure for the Objective Force is not a foregone conclusion, the potential for one or more types of failure is present. The current *Objective Force Concept* and *Transformation Campaign Plan* display opportunities for military failure in all three domains. Ensuring that the interim cavalry force is able to conduct the full array of traditional cavalry roles requires increasing the organic firepower resident in the RSTA squadron’s ground troops.

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CHAPTER ONE

INTRODUCTION

'Is it Not Treason to Cry Down the Horse?'

- Title of an inter-war period article in Cavalry Journal¹

Today the United States Army is in the midst of a bold and necessary transformation. This transformation is bold not only on its scope, but also because it is predicated on revolutionary technologies not yet fully realized. Furthermore, change is necessary because the world in which the Army will operate has fundamentally changed.

Since the end of the Cold War the environment of conflict has changed radically. No longer are potential threats to American and allied security identified, well defined and relatively predictable. Today, and even more so in the future, the environment within which the Army will operate is ill defined and complex to the point that it is nearly unpredictable. In order to meet this challenge, the Army is in the process of transforming itself into a new and more capable Objective Force.

The transformation of the Army from its current "legacy" structure to the Objective Force is predicated on the realization of significant technological advances and the evolution of a "general-purpose" combat force. This future general-purpose combat force will be equipped and trained to conduct ground combat functions currently divided among several separate and specialized sub-components of the Army, including infantry, armor, field artillery and armored cavalry. The general-purpose force "will possess inherent versatility to operate effectively anywhere in the spectrum of operations without substantial augmentation or mission tailoring".² In particular, many of the traditional roles of cavalry will be divided between networked general-purpose combat forces and Intelligence, Surveillance and Reconnaissance (ISR) systems.

¹ William O. Odom, *After the Trenches: The Transformation of U.S. Army Doctrine, 1918-1939*. (College Station, TX: Texas A&M University Press, 1999), p.64.

² Design parameters for the "General Purpose, Full Spectrum Capability" in TRADOC Pam 525-3-91 (Draft), *Objective Force Maneuver Unit of Action Concept*, (Headquarters, U.S. Army Training and Doctrine Command, Fort Monroe, Virginia, 29 August 2001), p. 28.

Today's forces, "Legacy Forces" in the transformation lexicon, are highly dependent upon specially trained and equipped cavalry organizations. Currently, cavalry units provide robust capabilities for reconnaissance, surveillance and security along with ground combat capabilities commanders may use in economy of force roles. As the transformation process progresses, cavalry units will leverage high-technology systems that enable them to vastly improve their ability to perform surveillance and reconnaissance tasks out of contact with an armed adversary. Simultaneously, the transformation of armored cavalry units to Interim Force Reconnaissance, Surveillance and Target Acquisition (RSTA) organizations will significantly diminish the organization's capability to independently execute the traditional cavalry tasks requiring contact with an enemy force. Aggressive reconnaissance or "fighting for information" and most security or ground combat missions currently assigned to "legacy" cavalry units cannot be executed by Interim Force RSTA organizations without significant augmentation. The current transformation plan culminates with fielding of the Objective Force Unit of Action³ and the likely elimination of specialized cavalry forces. Reconnaissance and surveillance tasks are assumed by ISR-suite equipped platforms while force-oriented tasks are executed by Future Combat System (FCS) equipped general-purpose units. As the transformation progresses through the Interim Force and eventually to the Objective Force, the current doctrinal and organizational foundation of cavalry diminishes then disappears.

It is the author's contention that, assumptions based on anticipated capabilities, the future threat environment and tentative employment techniques have led to a belief that many of the functions performed by cavalry organizations today, such as aggressive reconnaissance and economy of force operations, will no longer be necessary in future conflict. Consequently, the current vision of the Objective Forces does not include specialized units that are trained and

³ See Glossary. Unit of Action is defined as the "standing organizations with organic capabilities based on battlefield functional areas (BFAs)—maneuver, fires and effects, maneuver support, maneuver sustainment, intelligence/surveillance/reconnaissance, etc.—represented today by echelons of sections through brigade." (*Maneuver Unit of Action Concept*, 29 AUG 01).

equipped to execute the cavalry roles found in current doctrine. As with most well planned transformations, the doctrinal and organizational changes proposed through the Army's transformation to the Objective Force are based on a few important assumptions. These assumptions define how the organizational structure and doctrine will evolve from the current force to the Objective Force. If one or more of these assumptions prove false, the result could potentially lead to the loss of a necessary capability and its supporting force structure.

The purpose of this monograph is to identify and assess the key assumptions upon which the *Objective Force Concept* postulates the accomplishment of functions currently assigned as cavalry roles. Based on this assessment, a logical judgment will be made on the necessity for maintaining a specialized force to execute these current roles and functions. Finally, should there be any shortcomings identified, the monograph will recommend necessary modifications to the *Transformation Campaign Plan* and *Objective Force Concept*.

In order to provide a thorough analysis, the assumptions will be evaluated using historical precedent, the tenants of classical military theoreticians and the opinions of modern military scholars, and professionals. Using these tools, an evaluation will be made as to the validity of these assumptions. Further assessments will be made of assumptions deemed to be valid to determine how effectively they are addressed through current transformation plans and concepts. Assumptions determined to be invalid will be explored further to identify potential second and third order effects upon current plans. These findings provide the essential elements necessary for determining the need for a specialized, cavalry force in the future.

The history of the last one hundred years is replete with examples from another bold and necessary transformation of armies that resulted in military failures and scores of soldier's graves. The hope underlying this monograph is, to paraphrase noted military historian Sir Michael Howard, that we get this transformation "as close to right as possible." Part of achieving that goal is answering the question – *Are we shooting the horse too soon this time?*

CHAPTER TWO

WHAT IS CAVALRY?

*Army troops trained to fight on horseback or in armored vehicles.*⁴

Cavalry is defined by the warfighting functions it is associated with and the roles⁵ it is responsible to fulfill for the army as a whole. The purpose of this chapter is to define cavalry, its roles and associated functions, against which the future concepts and operating environment may be evaluated. Since the intent is to identify a definition that has withstood the test of time, this chapter will identify cavalry by the functions it has been associated with and its particular roles rather than the means used to execute them. This chapter will trace the evolution of cavalry from its entrance on the battlefield some 3700 years ago through its current missions and organizations. The evolution of cavalry as it coincides with each of the major evolutions in warfare will be discussed to identify its enduring roles. The functions normally associated with cavalry and their related missions provide the baseline of necessary capabilities that will be used to evaluate the pertinent aspects of the *Objective Force Concept* and the *Future Operating Environment* in subsequent chapters.

The Dawn of the Horse

Since the time when man and horse first appeared together on the battlefield, a distinct role of cavalry began to evolve. Around 1700 BC, the horse made its first significant impact upon the battlefield. The horse drawn chariots of Egypt, Mesopotamia and western China provided a new and impressive technological advance in warfare. The formation of a specialized arm of an army combining horse, man, carriage and weapon offered a greatly increased capability in warfighting.

⁴ Webster's Dictionary (1987). s.v. "Cavalry."

⁵ See Glossary. For the purposes of this monograph, the author defines "functions" as those tasks or sets of actions necessary for the army, as a whole, to perform an operation or mission. "Roles" are

This combination of vastly increased speed of attack and ranged firepower, provided by the bow, revolutionized warfare. From this ability, the first role of cavalry was identified – shock action. The original mounted arm had been born capitalizing on an ability to deliver psychological shock through speed and firepower.⁶

Shock action continued to serve as the primary role of cavalry through several iterations of change over the next 1500 years. With the advent of the stirrup and improvements in horse breeding, mounted warfare was able to evolve beyond the chariot. Soon warriors were able to fight directly from the horse further increasing speed and mobility. The result of these advances solidified the role of cavalry by bettering its ability to penetrate lines and paralyze the enemy's ability to react while providing the friendly army enhanced tactical flexibility.⁷ The capability provided by a specialized cavalry arm contributed to sometimes stunning, if unexpected, military feats. Attila the Hun's victories over Rome and Ghengis Khan's triumphs in Central Asia illustrate only a few of the numerous examples occurring between the time of the horse's introduction and through the period of the Roman Empire.⁸

During the golden era of Rome, the cavalry began to assume the additional roles of security and reconnaissance due to its great mobility and ability to fight effectively. The Roman wars of conquest depended upon the movement of large armies over great distances and through hostile territory. During battle the cavalry's role remained much the same, breaking the enemy line through shock action and fighting from the horse with bow and blade. However, during the march the cavalry began to assume a new role. Although the Romans continued to use light infantry,

defined as functions normally attributed to or the responsibility of a specific branch, arm or component.

⁶ John Keegan, *A History of Warfare*. (New York: Vintage Books, 1993), pp.155-76. Keegan provides a detailed description of the introduction of the chariot on the ancient battlefield. He asserts that the chariot was a revolutionary military-technological breakthrough leading to victory for those that possessed it and defeat for those that did not. This military innovation remained almost preeminent for several hundred years.

⁷ Robin Cross, ed. *Warfare – A Chronological History*. (London: Quarto Publishing, 1991), pp.11-14. This reference focuses on the enhanced tactical flexibility and shock value of both the chariot and cavalry fighting as mounted warriors in the Assyrian and Babylonian armies between the ninth and fifth centuries BC. Cross explicitly states that cavalry was used as “mounted warriors” vice scouts and messengers.

normally drawn from local populations, for scouting duties the cavalry gained the responsibility for securing the main body. While the infantry marched methodically by road, the cavalry capitalizing on its mobility, speed and fighting ability provided a covering force to the front and guarded the flanks. As the size of the Roman Empire grew the security role of cavalry also increased. The flexibility of cavalry forces coupled with a robust combat capability made them well suited for frontier security duties and service as a mobile reserve between dispersed armies. Undoubtedly the importance of cavalry had significantly increased as did the scope of its roles.⁹

Into the Middle Ages, cavalry remained an important military arm charged with responsibilities in both direct combat functions and security. As the heavily armored mounted warrior began to achieve almost preeminent status during this period, a great deal of effort was undertaken to innovated means to mitigate his capabilities. Two of the most significant military-technological advances of the Middle Ages were the introduction of the English or Welsh long bow and the Swedish pike. The increased range, speed of fire, and accuracy of the long bow provided significant threat to cavalry. Additionally, a line of infantry armed with pikes allowed for a viable defense against the cavalry charge and almost eliminated the possibility for penetration of the line and the desired shock effect. More than anything else, these two innovations caused a return to parity between the cavalry and infantry arms. Although the execution of cavalry roles became more difficult, they did not change. Cavalry remained a quick, highly mobile combat arms charged with shock action and security. However, shock action could now only be achieved through a coordinated effort with the infantry and the bowmen. This trend of coordinated actions between specialized arms of an army continued to effect the roles of cavalry into the Era of Gunpowder period. As the Era of Gunpowder dawned, the cavalry was charged with the roles of

⁸ Keegan, pp.177-217

⁹ Cross, pp.39-59. Cross suggests that by the end of the third century, cavalry had superseded infantry in the Roman order of battle. He takes this to be a significant statement as to the premium applied to cavalry's mobility and fighting potential especially along the frontier and in the eastern portion of the Empire.

reconnaissance, security for the march and encampment, as well as the role of shock action in direct combat.¹⁰

Cavalry in the Era of Gunpowder

The dawn of the era of standing armies and maneuver warfare saw both a specialization of cavalry forces and a resurgent increase in the importance of their roles. The single most influential innovation of this period was the military application and use of gunpowder. Not only did this technological advance provide improved means for infantry and mounted soldiers to fight, it added a new and deadly component to the battlefield in the form of cannon artillery.¹¹

The entry of firearms and artillery on the battlefield further complicated the execution of cavalry's shock function by extending the battlefield through vastly increased engagement ranges. This growing problem for cavalymen was answered through various means, but most significantly through specialization of the cavalry arm. Up to this point, cavalry performed three primary roles, reconnaissance, security and direct combat through shock action or as a mobile reserve. Although all of these roles required a degree of mobility and fighting potential, the cavalry's ability to execute them depended upon specialized training and equipment. Therefore, most armies began to separate their cavalry forces into light cavalry and heavy cavalry, who were sometimes further specialized as mounted infantry or dragoons.¹²

Heavy cavalry forces maintained the primary roles related to the direct combat. They were equipped with sabers and cooperated with the infantry in the attack by charging weak points in the enemy line, attacking the enemy gun line and in some cases fighting dismounted. On the march, heavy cavalry executed security tasks requiring a robust fighting capability such as the

¹⁰ Ibid. pp. 64-93

¹¹ Ibid. p.94-8

¹² Specialization of cavalry, though somewhat present since the horse entered the battlefield, gained its almost universal use in the post Renaissance period. The delineation between the various sub-fields of cavalry discussed here is taken from Maurice de Saxe, *My Reveries Upon the Art of War*. Edited by Brigadier General Thomas R. Phillips, USA. Vol. 1. *The Roots of Strategy*. (Harrisburg, PA: Stackpole Books, 1940. Reprint 1985), pp.224-6.

advance guard, covering force or mobile reserve. Although speed and mobility remained integral to their mission, the heavy cavalry was primarily a fighting force.¹³

Conversely, the forces constituting the light cavalry relied mostly on stealth and mobility. Lightly armed and armored this specialized cavalry force conducted reconnaissance and screening missions. Relying on speed, stealth and high mobility the light cavalry, though possessing a reasonable degree of fighting ability, served primarily as the “eyes and ears” of the commander rather than as a combat arm designed to close with and destroy the enemy.¹⁴

Into the seventeenth and eighteenth centuries, the roles of cavalry were divided among functional branches of the cavalry arm in most major armies. Although cavalry roles seemed to lose importance or effect for periods, the specialized nature of the cavalry coupled with military innovation allowed for improved methods to execute these roles and to adapt rather than disappear.¹⁵ Thus, the specialization of the cavalry forces provided a foundation for innovation and adaptation that allowed for the sustainment of a necessary warfighting function, shock action, as a viable role of cavalry.

The other roles of cavalry also remained critical to the success of armies after the introduction of gunpowder. The increased mobility of armies that began with Gustavus Adolphus continued into the eighteenth century. Increased mobility provided armies more flexibility in choosing the

¹³ For a more detailed discussion on cavalry specialization and adaptation relating to the military application of gunpowder see Keegan, p.331-0, Scott Stephenson, “Breitenfeld: A Battle Piece” in *The Evolution of Modern Warfare*, (Fort Leavenworth, KS: Combat Studies Institute, 2000), p. 44-8 and E.G. de la Calavaras, “The Battles of Rossbach and Leuthen, 1775” in *The Evolution of Modern Warfare*, (Fort Leavenworth, KS: Combat Studies Institute, 2000), p.70-8.

¹⁴ Ibid.

¹⁵ Ibid. p. 45-6. Examples of this adaptation are illustrated in detail by LTC Stephenson when discussing the period prior to the 1631 Battle of Breitenfeld he states, “Cavalry across Europe had renounced shock action in favor of the limited firepower provided by the pistol. They would ride close enough to fire pistol shots into the enemy ranks and retire to reload.” This technique developed in response to the cavalry’s inability to penetrate the pikes and muskets of the infantry line required a high degree of training only available through the specialization of the arm. This same specialization provided the Swedish King Gustavus Adolphus the ability to return cavalry shock action to the battlefield. Through the close cooperation between his highly trained and well-drilled infantry and cavalry, he was able to blunt enemy cavalry actions. As the enemy attempted to retire, he would immediately counter charge with his own troopers inducing shock not only in the enemy cavalry but throughout his line of infantry as the terrorized horsemen ran through their own infantry formations.

location for a battle. In addition, the increased mobility of armies meant that they often fought further from their home territories and one ground that was not known to them. Gaining a positional advantage on the enemy became paramount and essential in doing so was effective reconnaissance. In fulfilling this role, cavalry provided information about the disposition and location of the enemy as well as the surrounding countryside. Armed with this information, commanders were able to gain positional advantage and set the conditions for a successful engagement or battle.¹⁶

Success in battle also required the commander to deny the enemy pertinent information about his own disposition and location. This requirement further enhanced the cavalry's role in the function of security. Security evolved beyond merely providing physical security to the main force. It now included denying the enemy observation of the friendly force and knowledge about the area of operations. Thus, the concept of counter-reconnaissance¹⁷ became an essential component of security functions for the cavalry.¹⁸

The importance of proper execution of the cavalry's traditional roles remained constant even as cavalry adapted to the changes of the battlefield caused by the introduction of firearms and artillery. Through the innovations of great captains like Gustavus Adolphus and Frederick the Great, cavalry evolved and continued to remain relevant and necessary. This trend had not abated during the previous three thousand years and would not do so during the Wars of Napoleon,

¹⁶ A comprehensive discussion of the evolution of warfare in the Seventeenth Century and the innovations brought to the fore by Gustavus Adolphus can be found in Gunther E. Rothernberg, "Maurice of Nassau, Gustavus Adolphus, Raimondo Montecuccoli, and the 'Military Revolution' of the Seventeenth Century" in Peter Paret, ed. *Makers of Modern Strategy from Machiavelli to the Modern Age*. (Princeton, NJ: Princeton University Press, 1986), p.32-63.

¹⁷ "Counter reconnaissance" was not used as a common military term before the twentieth century. Nevertheless, the use of direct action against enemy scouts to prevent their gaining of relevant information on friendly force dispositions and terrain was a common practice since the time of Frederick the Great.

¹⁸ Frederick the Great discusses "security" and cavalry's role in Frederick II, King of Prussia. *The Instruction of Frederick the Great for His Generals 1747*. Translated and edited by Brigadier General Thomas R. Phillips, USA. Vol. 1. *The Roots of Strategy*. (Harrisburg, PA: Stackpole Books, 1940. Reprint 1985), p. 337-51.

highlighting the natural and necessary tendency of cavalry to adapt to evolutions in warfare and technology.

Napoleonic Warfare and Cavalry

By the last decade of the eighteenth century, warfare was again about to enter another major period of its evolution. The ascendancy of Napoleon Bonaparte and his methods of warfighting led to a further specialization of cavalry roles. At the time of the French Revolution, cavalry was separated into three distinct sub-divisions based on its battlefield functions. “There were three main categories of cavalry – heavy (for shock action), dragoons (capable of fighting on horseback or foot in close support of infantry formations) and light (responsible for reconnaissance, screening and pursuit roles).”¹⁹ Nevertheless, the turmoil and chaos of the revolution provided little opportunity for the exacting training required of the cavalry forces and its officer corps. Therefore, by the time Napoleon seized control of the French Army his cavalry was woefully untrained and practically incapable.²⁰

The sad state of affairs that the French cavalry found itself during the revolutionary period was not to last for long. Napoleon’s new system of warfare relied upon two elements that were intractably linked to the roles of cavalry, speed and surprise. Cavalry reconnoitered the best routes of march and screened the movements of Napoleon’s *corps de armee* providing both rapid and unimpeded movement for the army.²¹ Furthermore, Napoleon’s system sought conclusive decision once combat was joined. The opposing armies would not be allowed to withdraw to fight

¹⁹ David G. Chandler. *The Campaigns of Napoleon*. (New York: Macmillan Publishing Company, 1966), p.69. This further specialization of the cavalry arm proved to be a doubled-edged sword for the Republican France. Although the specialization of the cavalry offered the opportunity for the expert execution of traditional cavalry roles, this same system relied upon specialist both in the officer ranks and among the troopers. The turmoil and chaos of the revolution provided little opportunity for the exacting training required of the cavalry forces and its officer corps.

²⁰ Ibid.

²¹ Steven T. Ross. “Napoleon and Maneuver Warfare” in *The Harmon Memorial Lectures in Military History, 1959-1987*, edited by Harry R. Borowski (Washington, DC: Office of Air Force History, United States Air Force, 1988), reprinted in *The Evolution of Modern Warfare*, (Fort Leavenworth, KS: Combat Studies Institute, 2000), p.133-41.

another day, as was the custom in previous eras. Now the vanquished army would be pursued and destroyed once they broke on the field of battle. The role of pursuit fell to the cavalry and added another major combat function to its list of duties.²²

Napoleon's brand of decisive, maneuver warfare relied heavily upon the cavalry and the execution of their roles by highly specialized branches of the arm. He saw to it that each of the sub-divisions of the cavalry arm was properly trained, equipped and organized to fulfill their individual roles. Heavy cavalry retained the direct combat-oriented tasks of cavalry. Organized in separate units, the heavy cavalry served as a mobile reserve used to ride down opposing cavalry units and to exploit breaks in the enemy line causing shock and chaos in the rear. Cavalry-of-the-line or dragoons conducted screens and flank guards while the army was on the march. Additionally, cavalry-of-the-line maintained lines of communications and occasionally executed special missions or raids. The light cavalry was charged with the bulk of reconnaissance tasks. Light cavalry, supported by Dragoons, also participated in screen and guard missions and conducted pursuits after the battle. Napoleon also used the light cavalry to gain contact with the enemy and develop the situation with them through delaying tactics. It is the judgment of noted historian David Chandler that Napoleon's method of war would not have worked as well as it did without a well-trained and disciplined cavalry force.²³

The success of the *Grand Armee* ran in parallel with the capabilities of its cavalry. During the victorious campaigns through 1809, Napoleon enjoyed a qualitative and quantitative superiority in the cavalry arm. Through subsequent attrition and an inability to replace and train his specialized cavalry troopers, this advantage was lost. Napoleon's system relied upon speed and surprise, but more over relied upon an inadequate foe began to die. The other major armies of

²² Ibid.

²³ Chandler, pp.352-6

Europe began to reorganize and modernize along similar lines to Napoleon's forces.²⁴ Although Napoleon's reign and the campaigns that bear his name ended in 1815, the roles and functions of cavalry that were born from his system continued in the major armies of the world well into the period of the Industrial Revolution.

Cavalry in the Industrial Age of Warfare

The impact of industrialization on warfare set the stage for separating the missions and roles of cavalry from the physical being of the horse. The middle nineteenth century saw the beginnings of the "Industrial Revolution" and its resulting applications in the realm of warfare. The changes in warfare resulting from the Industrial Revolution were monumental. "Technology affected war in three main areas. It increased the range and lethality of weapons; improved transport and communications – from railway, through steamship to electric telegraph; and finally, it strengthened [defenses] from the [armored] turret to the concrete fortress carapace."²⁵ The manner in which these innovations affected cavalry became quite apparent during the Prussian wars of the 1860s and 1870s.

The experiences of cavalry during the Franco-Prussian War of 1870-71 provide insight into the evolution of cavalry due to the industrialization of warfare. Weapons' ranges, accuracy and rate of fire had greatly increased mitigating the ability of cavalry to close the distance with infantry between reloads. This fact coupled with a much greater reliance upon strong fortifications and improved artillery reduced the effectiveness of cavalry as a direct combat force. Speed was no longer enough to induce shock in an enemy now well armed and fortified. As the strength of the infantry and artillery arms continued to grow, the value of cavalry was relegated to only a few of its traditional roles. Although the cavalry maintained some limited capability in

²⁴ Robert M. Epstein, *Napoleon's Last Victory: 1809 and the Emergence of Modern War*. (Fort Leavenworth, KS: United States Army Command and General Staff College, 1992), pp. 272-5. By the 1813 campaign, Napoleon's cavalry was a shadow of what it had once been and the cavalry of the alliance against him had vastly improved.

²⁵ Cross, p.151.

pursuit and reconnaissance, combat actions, as an economy of force, became its primary role. The cavalry charge against the enemy's main line was gone.²⁶

The Franco-Prussian War marked the end of cavalry as a force used for decisive action. Although, "...the cavalry acknowledged as a principle that they cannot attack intact infantry with any expectation of success..."²⁷ the need for cavalry to maintain a high degree of fighting ability remained. As Prince von Hohenlohe continued,

The duties of the cavalry of the present day will always be, as I have already remarked, the same as those which the arm discharged in former campaigns. It will always watch the enemy, conceal its own force, assist in final decisive action at the end of the battle, and either take up the pursuit or cover the retreat.²⁸

The impact of the industrial age of warfare relegated cavalry's role of direct combat to that of an economy of force, while maintaining its other traditional roles of reconnaissance and security intact. No longer able to stand alone in decisive combat, the trend that had begun with the advent of gunpowder had run its course. Cavalry would no longer be identified with the role of destroying the enemy or seizing ground. Rather, cavalry continued to serve in reconnaissance and security roles as well as "...tir[ing] out the enemy, and preserv[ing] their own infantry from much exertion..."²⁹ as an economy of force.

Reconnaissance, security and economy of force remained the primary roles of cavalry up to the beginning of the First World War. The exponential increases in firepower and field fortifications between the Franco-Prussian War and the First World War provided the cavalry seemingly insurmountable troubles in the execution of their traditional roles. The situation in Belgium and France by the fall of 1914 had rendered the cavalry nearly impotent.

²⁶ Prince Kraft von Hohenlohe-Ingelfingen, *Letters on Cavalry*. Translated by Lieutenant Colonel N.L. Walford, United States Army. (Leavenworth, KS: George A. Spooner Co., 1892.), p.30-40. Hohenlohe provides a detailed discussion of the evolution of cavalry based on the Prussian experiences during their war with France.

²⁷ Ibid., p.59.

²⁸ Ibid.

²⁹ Ibid., p.57

It was almost the last occasion on the Western Front when horsed cavalry would be able to perform its traditional function of reconnaissance let alone that of shock action.

Mounted divisions were maintained awaiting a breakthrough in the trench deadlock but, on those occasions when it was brought up, cavalry had no answer to wire and machine guns.³⁰

Cavalry found itself at the point of obsolescence because of the main aspect from which it had derived its potential nearly three millennium prior – the horse. Although the functions of reconnaissance, security and economy of force remained necessary and the attributes of speed and mobility were still essential, the cavalry could no longer provide either with the horse.

Cavalry and Mechanization

After the First World War, technological innovations applied to military purposes helped to redefine cavalry organizations permanently breaking their bond with the horse. The frustrations of the First World War led to innovations attempting to meet modern armies' need for effective reconnaissance, security and economy of force. During the war, rudimentary attempts to fill the void of cavalry were made with reconnaissance and pursuit aircraft. The development of the tank provided a limited capability for overcoming field fortifications and the effects of the machine-gun. Nevertheless, no viable solution met the requirements of the traditional cavalry roles by the end of hostilities in November 1918.

During the period between World War One and the Second World War, the major armies of the world embarked upon a path of mechanization. Cavalry having, since its inception, relied upon speed and mobility was no exception. Mechanization provided cavalry the ability to again capitalize upon its old strengths to execute its traditional roles through different means. Although a common goal among the world's best armies, attempts to meet requirements associated with the roles of cavalry through mechanization varied greatly between nations.

³⁰ Cross, p.179

Germany applied the techniques previously used to improve the performance of cavalry and attempted to apply them to the entire army. Only a handful of years after the end of the First World War, General Hans von Seeckt stated, “The whole future of warfare appears to me to lie in the employment of mobile armies, relatively small but of high quality and rendered more effective by the addition of aircraft...”³¹ In the German view, no longer would only the cavalry rely upon mobility and speed rather the entire army would benefit from this capability through motorization and mechanization. Von Seeckt’s view of future cavalry evolved along the same lines at the army at large. He recognized that cavalry charges were outdated and saw the transformation of cavalry in terms of forming combined arms divisions, smaller than normal line divisions, used primarily for economy of force functions.³² The Germans continued to see the horse cavalry fulfilling a specific role in reconnaissance and screening in the mountains, due to the nature of the terrain. However, by the mid-1930s augmentation of the horse by motorcycles, automobiles and aircraft was deemed optimal for execution of reconnaissance and security missions without regard to the terrain.³³ For the Germans, motorization and mechanization of the army was essential. Likewise, motorization and mechanization of a specialized force for execution of traditional cavalry roles was very important.

The French took a similar approach to cavalry mechanization. French defensive doctrine and need to rapidly move forces across the Belgian frontier in case of a German invasion, provided a certain degree of focus to cavalry transformation. As explained by Robert Doughty, cavalry was “...ideally suited for moving rapidly...and fighting against superior enemy forces” and as a

³¹ James S. Corum, *The Roots of Blitzkrieg*. (Lawrence, KS: The University Press of Kansas, 1992.), p.31

³² Ibid., p.32

³³ Robert M. Citino, *The Path to Blitzkrieg – Doctrine and Training in the German Army 1920-1939*. (Boulder, CO: Lynne Rienner Publishers, Inc., 1999.), p.228.

result, “[c]avalry units also received special consideration.”³⁴ The specialized function of cavalry was further delineated in the updated cavalry regulation of 1930. Cavalry units were organized and equipped to accomplish traditional cavalry functions of reconnaissance, security and economy of force. French cavalry forces continued to depend more on its historical strength of mobility, vice firepower. Although the French cavalry regulation of 1930 included large portions regarding regiments of horse, to the dismay of cavalry traditionalist it emphasized the evolving nature of the cavalry mission and the necessity for modernization through mechanization.³⁵

American cavalry transformation before the Second World War encountered the same battles between horse cavalry traditionalist and the proponents of mechanization. Like the Germans, the United States Army saw the necessity for mechanizing its forces to meet the challenges of future war. In 1931 as Chief of Staff of the Army, General Douglas MacArthur, identifying the need for cavalry to adapt to the realities of the “modern” battlefield, directed “...cavalry to develop its organization and equipment so as to maintain its ability under modern conditions to perform its missions...”³⁶ Although the groundwork had been established for the development of both an armored force and the transformation of cavalry, infighting and parochialism prevented the United States from any substantial innovations in either area until 1940.

³⁴ Robert Allan Doughty, *The Seeds of Disaster – The Development of French Army Doctrine 1919-1939*. (Hamden, CT: Archon Books, 1985.), pp.68-9. The entire passage states, “Cavalry units also received special consideration. The High Command considered them ideally suited for moving rapidly into Belgium, providing the security for the remainder of the force, and fighting against superior enemy forces. The cavalry could accomplish an economy-of-force mission and guard the infantry-heavy forces as they occupied their positions. Since it could fulfill an important defensive mission, its modernization was easier and its adoption of modern tanks was much more rapid than other French forces.”

³⁵ *Ibid.*, pp.169-70

³⁶ Mildred H Gillie. *Forging the Thunderbolt – A History of the Development of the Armored Force*. (Harrisburg, PA: The Military Service Publishing Company, 1947.), p.48. MacArthur stated, “Cavalry acquired its name when soldiers mounted on horses were able to move more rapidly than any other arm...Thus there grown up a very natural conception that cavalry must include the horse. Modern firearms have eliminated the horse as a weapon, and as a means of transportation he has become next to the dismounted man, the slowest means of transportation...To enable cavalry to develop its organization and equipment so as to maintain its ability under modern conditions to perform its missions...the Mechanized Force will be reorganized as a reinforced cavalry regiment.”

Against the desires of many senior cavalry officers, a small group of cavalrymen provided the drive and leadership necessary to bring both a new armored force and a new cavalry into being. “They and other cavalrymen had long recognized that aviation, motors, and armor would perform many of the missions that mounted men had performed in past wars, and would perform them effectively.”³⁷ With this, the new armored corps revived the former cavalry capability of shock action while the mechanized cavalry continued to perform reconnaissance, security and economy of force missions.

As the major armies of the world entered their second war of the century, cavalry roles remained essentially the same and as vitally important as they had been in previous centuries. The methods and means had changed, but the roles traditionally assigned to the cavalry continued to be necessary and a former role had been revived with the formation of another combat arm - Armor.

In Search of the “Right” Organization

With the outbreak of the Second World War, the United States Army struggled to find the best organizational structure to execute the cavalry mission. Internal struggles within the army continued to retard cavalry’s transformation. Although the recently revived role of shock action had been reborn in the armored force, the roles normally associated with “cavalry-of-the-line” and the “light cavalry” were neglected. Immediately prior to the outbreak of war, actions were taken to “...[turn] the mechanized cavalry into a mere reconnaissance force.”³⁸ Although reconnaissance remained an important of the cavalry, it was organized in a manner that significantly reduced its ability to accomplish its other two primary roles, security and economy of force. Throughout the war, the United States Army collected lessons-learned and attempted to

³⁷ General Lucian K Truscott, Jr.. *The Twilight of the U.S. Cavalry – Life in the Old Army 1917-1942*. (Lawrence, KS: The University Press of Kansas, 1989.), p.166.

³⁸ Gillie, p.101

find the proper balance in organization and equipment to adequately meet the requirements of all three roles.

After action reports of cavalry units during the Second World War provided important lessons pertaining to the organization and equipping of these forces for the execution of their traditional roles. Although cavalry groups of the period were sufficiently organized and equipped for most reconnaissance missions, they were not adequately prepared for more force-oriented missions. The experiences of the 4th Cavalry Group provide insight into the difficulties the unit had accomplishing security and economy of force missions during the Ardennes Campaign in 1944.

The organization of the Group was inadequate to perform the missions assigned. It can be seen that attachment of tank destroyers, tanks, artillery, and engineers was necessary to augment the two squadrons. At no time did the Group operate without some of all of these added elements. Therefore, it can be reasoned that a self-sufficient grouping of forces with at least a minimum of the necessary combined arms should constitute the standard makeup of corps cavalry units.³⁹

Reports like these contributed to the army's effort in determining the best organization for future cavalry formations.

Over the intervening years between the end of World War Two and the present, organizational changes of cavalry units from platoon to regiment have moved back and forth between emphasis on stealthy reconnaissance and force-oriented security missions. After the Korean War and into the mid and late 1950's era of the Pentomic Division, cavalry relied more on stealth and was equipped with jeeps. After a review through the Reorganization Objective Army Divisions (ROAD) concept in the early 1960s, the cavalry's structure again swung toward a force more suited for security and economy of force tasks through the inclusion of armored

³⁹ Slaughter, S.D. LTC, et al. "The Cavalry Group as an Economy Force: 4th Cavalry Group in World War II, 19 December – 31 December 1944." Research Report. (Fort Knox, KY: The Armored School, 1950.), p.75

personnel carriers and tanks.⁴⁰ Another important addition from the ROAD concept was the addition of rotary wing aircraft, with first reconnaissance and then later attack capabilities, into divisional and corps cavalry units.⁴¹

The search for the proper cavalry organization continued through numerous Table of Organization and Equipment (TO&E) changes in the 1970s and 1980s. During the 1980s, division cavalry squadrons were initially equipped solely with scout vehicles and aircraft although mission requirements continued to demand a significant degree of protection and firepower to fulfill traditional cavalry roles. To meet these requirements, cavalry squadrons were augmented with tanks in order to perform their assigned missions. This discontinuity between the cavalry squadron's organization and its mission requirements under the "Army of Excellence" TO&E became readily apparent.⁴² By the end of the decade, tanks were again included in the squadron TO&E. Today, cavalry units are organized and equipped to execute the traditional cavalry roles of reconnaissance, security and economy of force⁴³ with adequate capability and balance between the three.

Cavalry Today

Cavalry organizations today are optimized to effectively meet the requirements of modern warfare and the expectations of their current doctrinal roles. Current US Army doctrine states, "The fundamental purpose of cavalry is to perform reconnaissance and to provide security in loose combat operations... [and] Cavalry is, by its role, an economy of force."⁴⁴ Today, The cavalry of

⁴⁰ Wolff, Terry A. MAJ, "Tactical Reconnaissance and Security for the Armor Battalion Commander: Is the Scout Platoon Combat Capable or Combat Ineffective?" Monograph. (School of Advanced Military Studies. Fort Leavenworth, KS: US Army Command and General Staff College, 1991), p.10

⁴¹ Wolf, James F. MAJ, "Ground Reconnaissance in the Heavy Corps: Do Tactical Assets Match Mission requirements?" Monograph. (School of Advanced Military Studies. Fort Leavenworth, KS: US Army Command and General Staff College, 1988.), p.8-9

⁴² Ibid. p.9-10

⁴³ See Glossary for current definitions of reconnaissance, security and economy of force.

⁴⁴ Field Manual 17-95, *Cavalry Operations*, (Headquarters, Department of the Army. Washington, DC, 24 December 1996.), p.1-1 – 1-2. This passage goes on to state, "In doing so, cavalry facilitates the corps or division commander's ability to maneuver divisions, brigades, and battalions and to concentrate superior combat power and apply it against the enemy at the decisive time and point. Cavalry clarifies, in part, the fog of battle. Cavalry is, by its role, an economy of force. The flexible capabilities of cavalry allow the commander to conserve the combat power of divisions or brigades for engagement where he desires. The combat power of cavalry units, in particular, makes them ideal for offensive and defensive missions as an economy of force."

the United States Army possess the means to perform reconnaissance through several different and redundant means without regard to environment or enemy disposition. Cavalry organizations are able to provide security for much larger friendly units without augmentation⁴⁵ and conduct both offensive and defensive economy of force operations. Cavalry provides a specialized role in support of army operations, a role that it is specially organized trained and equipped to perform.

The baseline measure for any military organization is a clearly defined set of relevant roles and an organizational structure able to meet those mission requirements. In the previous sections, the evolution of cavalry was traced from its beginnings to the present day. Cavalry has evolved because of and due to technological innovations and their military application. Its doctrine and techniques have adapted based on these innovations and the evolving requirements for the execution of its traditional roles.

In determining the measure by which the need for cavalry organizations may be evaluated in the future, the enduring warfighting functions associated with cavalry must be identified. Based on historical analysis, three functions required by the army have been identified as roles that define cavalry:

- 1) Perform **reconnaissance** to obtain relevant, useful and accurate information
- 2) Perform **security** missions to preserve the combat power of friendly forces
- 3) Perform offensive and defensive operations as an **economy of force** to allow the commander to concentrate the bulk of his combat power at the decisive point

Today, a specially trained, organized and equipped organization is the force of choice to accomplish these functions for the army as a whole – the cavalry. These three functions establish the measure for determining what is necessary, but not how or by whom it is done. Today,

⁴⁵ Ibid., Chapter 4. This reference states “Cavalry units perform security operations as organized or reinforced.” Reinforcement with combat and combat support assets may be necessary depending on the particular situation and mission. Nevertheless, divisional cavalry squadrons are organized and equipped to provide security for the division’s main body. Cavalry regiments are likewise organized and equipped to provide the same to their parent corps. Reinforcement of cavalry with large amounts combat or combat support assets is the exception, not the rule.

essentially the only combat formation specifically tailored to conduct reconnaissance and security missions, as well as fight as an economy of force, is the cavalry. As history has demonstrated, new or other branches of an army may assume functions such as shock action, long identified as a role of cavalry. If these necessary functions are adequately fulfilled through other means that is sufficient.

As the old tome says, “Cavalry is not a branch, it is a state of mind.” The baseline functions, as established, allow us to determine where it should reside in the future, split among several forces or within a single, specialized force.

CHAPTER THREE

THE FUTURE OPERATIONAL AND THREAT ENVIRONMENT

Thus, it is said that one who knows the enemy and knows himself will not be endangered in a hundred engagements

- Sun Tzu⁴⁶

This chapter describes the projected future operating environment within which the Objective Force was designed to operate. In developing its transformation plan and the *Objective Force Concept*, the Army concurrently postulated a new view of what the future battlefield would look like. This vision of potential threat organization, capabilities, tactics, techniques and procedures, coupled with anticipated locations where conflict might erupt serve as a measure against which transformation planning and concept development might proceed. As a cornerstone of the entire process, it is essential that the Army's view of the *Future Operational Environment* (FOE) is reviewed and its fundamental assumptions identified. These assumptions will be analyzed and assessed in Chapter Five.

Since the scope of this monograph is limited to answering a question as to the future of cavalry forces, the entire breadth and depth of the FOE will not be covered. Cavalry units and their successors in the Objective Force operate at the tactical level. Therefore, this investigation and summary will be concerned only with questions and assumptions pertaining to that applicable level of warfare.

⁴⁶ Sun Tzu, *Art of War*. Translated by Ralph D. Sawyer. (Boulder, CO: Westview Press, Inc., 1994.), p.179.

Operational Concepts

According to the FOE, future adversaries of the United States will develop operational concepts focused on denying access to US Forces and defeating its military strengths. The perception that US Forces are overly cautious and predictable has led potential adversaries to believe they can either prevent or deter military action by the United States. By increasing uncertainty and potential risks to American forces and by acting to mitigate the effects of standoff attack, future enemies will attempt to achieve their operational goals by exploiting perceived weaknesses in our will to fight.⁴⁷

The FOE predicts the intelligent, adaptive foe of the future will couple his high technology “niche” capabilities with conventional and low technology means to further complicate the tactical and operational situation for US forces. Future enemies will employ varying means to increase uncertainty and elevate the perceived level of risk to US Forces. This future threat will organize to fight asymmetrically without providing an easily discernible pattern of operations and without centralized control. He will employ various models of combat equipment, complicating our ability to anticipate his actions and identify his weaknesses. The future enemy will deploy on terrain and use tactics that require close combat and marginalize American advantages in standoff and C4ISR. These organization and equipment changes coupled with adaptive tactics and use of terrain provide the potential for significant challenges related to the traditional roles of cavalry.

Organization and Equipment

The United States Army’s vision of potential threats differs significantly from those of the Cold War era that drove the fielding of the current Army force structure. The Army of today evolved based on countering an enemy organized in a manner similar to that of the former Soviet Union and its Warsaw Pact allies. Since the fall of the Berlin Wall and America’s impressive

⁴⁷ *Future Operational and Threat Environment: A View of the World in 2015*, (Deputy Chief of Staff for Intelligence, U.S. Army Training and Doctrine Command, Fort Monroe, Virginia), 1 February 2001., p.1

victories in Panama and the Persian Gulf, the vast majority of the world's militaries have started to adapt and change their military organizational methods away from the Soviet model.

The FOE foresees potential adversaries replacing outdated organizational structures while capitalizing on the availability of inexpensive technology and the particular strengths of their indigenous peoples and culture. "These militaries are shedding Cold War patterns and developing capabilities more suited to their particular cultures, circumstances, and perceived threats [to include the United States]."⁴⁸ The relatively predictable patterns of task organization and command and control hierarchy common to Warsaw Pact based forces will no longer be the norm. Although capable of limited participation in large or medium scale linear combat operations, the enemy of the future will organize to fight and survive through decentralized control over semi-autonomous units operating non-contiguously. The future threat must and will organize themselves to gain maximum capability and survivability while avoiding the inherent strengths of the US.

As they shed the organizational structures of the Cold War, the FOE anticipates that potential adversaries will also change the way they equip their forces. The future threat will no longer maintain only a conventional, Soviet-based suite of equipment. In all likelihood, a future enemy will possess a mixture of conventional weapons and equipment from various arms producing nations, including those of the former Soviet states, Western Europe and other developed nations along with the United States itself.

This multinational mix of equipment presents obvious problems for tactical planners, executors and ISR systems. The actions of an enemy possessing varying types of weapons systems is significantly more difficult to anticipate. Like equipment and weapons systems provide coherent patterns of capabilities and limitations that allow planners to anticipate enemy courses of action. The use of several different types of weapons systems greatly increases the options the

⁴⁸ Ibid. p.3

enemy has available while increasing the difficulty for planners to predict and counter enemy actions.

A related problem occurs when enemy forces use weapons systems common to the US or our allies. Target identification is extremely difficult, whether by men or high technology surveillance systems. Increased opportunity for fratricide and difficulties in gaining and sustaining situational awareness are by-products of enemy employment of weapons systems used by the US and our friends and allies.

In addition to possessing a myriad of various types of conventional weapons systems, the FOE describes a future enemy that will use its limited resources on obtaining “specific ‘niche’ capabilities” in order to provide high technology answers to historical US strengths. The Army anticipates the enemy of tomorrow will possess state-of-the-art man portable air defense systems (MANPADS), anti-shipping missiles and in some cases cruise missiles. These weapons are low cost alternatives to strong air forces and navies that provide a significant capability to counter US forcible entry and force deployment capabilities.

Furthermore, it is believed that future adversaries will develop and employ weapons of mass destruction, including chemical, biological and radiation emitting devices. These “weapons of mass destruction” are meant to serve as a deterrent as well as a means of inflicting mass casualties on US forces in an effort to break American “will” for intervention.

Along with advanced weaponry, the FOE envisions our enemies will obtain and use of off-the-shelf computers and communications devices to further enhance their command, control and offensive informational capabilities while minimizing their cost to develop and purchase these systems.⁴⁹

⁴⁹ Ibid., p.4

Tactics and Terrain

The techniques and tactics of tomorrow's threat, whether state or non-state actors, will rely upon the application of asymmetric actions. They will avoid conventional force-on-force actions with the US while attempting to preserve the viability of their conventional mechanized forces for use against enemy with whom they have parity and to maintain internal security. Actions against US Forces will likely be unconventional, hit-and-run operations against soft targets like command and control facilities and logistics nodes. These attacks would be conducted with a combination of high technology capabilities, such as advanced anti-armor and anti-aircraft missiles, and terrorist or guerrilla type attacks.

Conventional attacks are not anticipated early in the conflict unless the possibility of rapid transition and decisive action is assured. Future threat forces will make every effort to compensate for the lack of technological parity with US combatants by focusing their efforts against perceived weaknesses. Any means available to prevent US entry into the area of operations will be attempted. Serious attempts to cause mass casualties and to attack the will of the United States are foreseen as the primary objectives of future threat forces.⁵⁰

Attacking the "will" of US forces through direct action and informational efforts is central to the procedures anticipated by the threat described in the FOE. A major aspect of achieving these aims is the choice of when and where to fight US Forces. Our adversaries, conscious of their own limitations, will seek decisive action using terrain which best affords survivability while presenting tactical difficulties for US Forces. "To reduce exposure and complicate US targeting, adversaries will disperse and operate from areas of physical and moral sanctuary often located in complex, urban terrain, shielded by civilians and man-made structures."⁵¹ The danger and complexity of Military Operations in Urban Terrain (MOUT) can provide the enemy considerable opportunity to inflict heavy casualties on US Forces while exploiting the loss of civilian life and

⁵⁰ Ibid.

destruction of property for informational purposes.⁵² In the view of the Army, MOUT is not merely likely in future conflicts but rather, it is a certainty.

Summary

Based on the predictions offered in *Future Operational and Threat Environment: A View of the World in 2015*, the enemy and battlefield of the future will be imminently more complex, unpredictable and dangerous. The FOE possesses a few essential characteristics that make it significantly different from the previous environment of the Cold War era, upon which the Army's current force structure is based. These differences provide the basis for three major assumptions, which support the FOE's vision of conflict.

The first assumption is that threat organizations will appear patternless and difficult to anticipate due to use of various nations' weapons systems and adaptive, asymmetric tactics. This assumption relates directly to the functions of security and reconnaissance. Enemies, whose actions are difficult to predict, threaten to surprise friendly forces. Currently, US organizations dedicate portions of the combat force to provide security for the main body in order to mitigate the potential for surprise.

Another assumption is that future adversaries will possess high technology "niche" capabilities that threaten US Forces, but will not have the capability to achieve a viable degree of technological parity with the United States. This assumption relates to the future of all three traditional cavalry roles of reconnaissance, security and economy of force. Much of the *Objective Force Concept* and the future of cavalry organizations are predicated on American military technological dominance well into the future. This technological superiority is assumed to provide both greatly enhanced capabilities while preventing the development or use of effective

⁵¹ Ibid.

⁵² Ibid., p.5 states, "The use of complex and urban terrain, decentralized operations, and focused strikes...against key capabilities, will...consume manpower and resources. Adversaries will actively seek to increase uncertainty and expand opportunity for surprise. Loss of contact with the enemy will have greater consequences than in more open environments against more predictable echeloned forces."

countermeasures by the enemy. Since capabilities of this nature do not exist throughout the Legacy or Interim force, this assumption is critical to effectively bridging the gap between current cavalry forces and the execution of their traditional functions in the Objective Force.

Finally, it is assumed that potential adversaries will force the US into operations in complex terrain to include urban areas, mountains and the jungle. This assumption bears directly upon the role of reconnaissance. The *Objective Force Concept* and the current design of the Interim Force RSTA squadron reflect an assumption that passive means and methods of reconnaissance will suffice in the future. The limitations on today's sensor-based surveillance systems in complex environments, such as cities, mountains and jungles, lead to some questions of this assumption until better systems are developed.

These three assumptions form the tactically relevant core of the FOE and serve as an integral part of the evaluation of cavalry's future role. The answer to the challenges of the future battlefield and enemy may be found in advanced technologies. However, these technological solutions do not exist today. The gap between future needs and current capabilities provides a potential risk to future mission success. As RSTA squadrons provide the bridge between current capabilities and future requirements, they will be key in defining the future need and roles of cavalry organizations.

The description of the FOE battlefield provided the working environment from which the current *Objective Force Concept* and the *Transformation Campaign Plan* were developed. As a cornerstone in the production of these documents, the FOE and its key assumptions must be assessed to measure its validity as that will, therefore allow a better evaluation of these concepts and plans as they apply to the future of cavalry.

CHAPTER FOUR

CAVALRY AND THE OBJECTIVE FORCE CONCEPT

We will design into our organizational structures, forces which will, with minimal adjustment and in minimum time, generate formations which can dominate at any point on the spectrum of operations.

- General Eric K. Shinseki, Chief of Staff of the Army⁵³

The purpose of this chapter is to identify the anticipated doctrinal and organizational assumptions pertaining to cavalry throughout the current transformation to the Objective Force. These assumptions, their validity and their implications, will provide the basis of analysis of the current transformation plan for cavalry in the next chapter.

In searching for the doctrinal and organizational assumptions involving the traditional roles of cavalry, the investigation will start at the anticipated endstate for transformation— The Objective Force. From the Objective Force, the investigation works backwards to the current situation in the transformation process. The proposed adaptations identified in this chapter and their underlying assumptions will provide essential data for the subsequent evaluation for the necessity to maintain a specialized force to execute the traditional roles and functions of cavalry.

Starting at the Endstate: The Objective Force

The Objective Force concept leverages technological innovations to execute the functions traditionally associated with cavalry. Traditional cavalry roles are reconnaissance, security and combat action as an economy of force.⁵⁴ Today these functions are accomplished by specially

⁵³ General Eric K. Shinseki, “The Army Vision: Soldiers on Point for the Nation...Persuasive in Peace, invincible in war”, Available at http://www.tradoc.army.mil/transformation/Data%20pages/csa_vision.htm; Internet accessed 3 September 2001.

⁵⁴ According to FM 101-51, Economy of Force is defined as “The allocation of minimum-essential combat capability or strength to secondary efforts so that forces may be concentrated in the area where a decision is sought. Economy of force is a principle of war and a condition of tactical operations.”

trained, organized and equipped formations. Upon completion of the transformation, the current transformation plan postulates that only reconnaissance will remain within the purview of a specialized units and systems. The functions of security and economy of force are to be assumed by the general-purpose combat battalion or “unit of action”⁵⁵ itself. The next few sections will further illustrate how the Objective Force concept envisions accomplishment of these functions and what assumptions are made to see these changes to fruition.

Reconnaissance

The Objective Force depends upon leveraging high-technology sensors through networked command, control, communications and computers (C4) systems to conduct reconnaissance out of physical contact with the enemy. A system of Intelligence, Surveillance, and Reconnaissance (ISR) capabilities centrally connected and distributed through the C4 network provides the cornerstone for much of the Objective Force concept. This network-centric, “system of systems”⁵⁶ approach to gaining and maintaining “situational understanding”⁵⁷ depends upon a specially trained, organized and equipped force for brigade and higher tactical echelons.⁵⁸ This force includes “ISR and [Information Operations/Electronic Warfare] IO/EW elements such as radars, jammers, [Human Intelligence] HUMINT, higher echelon aerial reconnaissance and [Unmanned Aerial Vehicles] UAVs.”⁵⁹ Like current cavalry formations, these ISR elements will be depended upon to provide timely, relevant information to commanders throughout the force.

⁵⁵ For the purpose of simplicity, current tactical formation designations such as battalion, brigade and division may be used when referring to the broader concept of Units of Action. The Objective Force Concept neither assumes nor discounts these formation designations in the future

⁵⁶ See Glossary. System-of-systems is a key elemental concept of the Objective Force it is “the design of tactical organizations from the small core team (for instance, the infantry fighting vehicle crew and infantry fire team) upward in a networked design that ensures team (collaborative) organizations that have no discernible points of failure.”

⁵⁷ See Glossary. Situational understanding is defined as “the cumulative effects derived from knowledgeable leaders and soldiers, and other revolutionary technologies that enable the Objective Force units to achieve the Quality of Firsts: see first, understand first, act first and finish decisively.” (*Maneuver Unit of Action Concept*, 29 AUG 01).

⁵⁸ TRADOC Pam 525-3-91 (Draft), *Objective Force Maneuver Unit of Action Concept*, (Headquarters, US Army Training and Doctrine Command, Fort Monroe, Virginia, 29 August 2001.), p.23

⁵⁹ *Ibid.*, p.24

By leveraging advanced technologies in the future, the *Objective Force Concept* hypothesizes a far greater degree of fidelity and speed of dissemination for battlefield information than is currently possible or expected of cavalry organizations. This enhanced capability is not only derived from improvements in actual collection, but also through advances in communications and display ability at the user level. Close combat organizations of the future will be better able to fight and survive by maintaining superior situational awareness through advanced technologies.⁶⁰ Conceptually, the networking of specialized collectors conducting reconnaissance tasks with the shooters or combat battalions provides an optimal, symbiotic relationship within the system of systems.

Security

In the *Objective Force Concept* security is internally provided by the Units of Action⁶¹ through enhanced situational understanding. The internetted network of sensors and communications systems upon which the Objective Force is based are designed to provide the combat battalions and brigades dominant situational understanding⁶² in order see first, understand first, act first and finish decisively. The Training and Doctrine Command (TRADOC) *Draft Maneuver Unit of Action Concept* envisions a force that "...will possess robust, inherent...survivability capabilities...[that will] enable maneuver units to avoid/negate threat

⁶⁰ Ibid., p.8. This reference specifically states, "Enabled by advanced C4ISR capabilities integrated horizontally and vertically, the [general-purpose combat] battalion gains and maintains information superiority in its area of operations. Superior situational understanding underwrites virtually all of the battalion's advanced capabilities and enables it to operate with precision and improved efficiency."

⁶¹ See Glossary. Unit of Action is defined as a "standing organizations with organic capabilities based on battlefield functional areas (BFAs)—maneuver, fires and effects, maneuver support, maneuver sustainment, intelligence/surveillance/reconnaissance, etc.—represented today by echelons of sections through brigade."

⁶² See Glossary. The TRADOC *Maneuver Unit of Action Concept*, dated 29 AUG 01, defines Situational Understanding as the cumulative effects derived from knowledgeable leaders and soldiers, and other revolutionary technologies that enable the Objective Force units to achieve the Quality of Firsts: see first, understand first, act first and finish decisively.

capabilities.”⁶³ Therefore, it would not be necessary to dedicate part of the force to provide security for the main body of the combat forces. The conceptual “system-of-systems” provides the necessary situational understanding for the main body to avoid enemy contact or handle the situation internally with jeopardizing the unit’s flexibility or survivability. In other words, security is provided through the Objective Force’s actual design, operational concepts and capabilities rather than by a specific force or mission. Unlike the situation today where the cavalry provides protection to the secured force, the Objective force “...brigade must undertake deliberate efforts to protect its C4ISR capabilities in order to retain its protective advantages.”⁶⁴

Security is inherent to the network-centric nature of the Objective Force. The providing of reaction time and maneuver space and the preservation of combat power are ancillary effects of the situational understanding provided through the mostly passive means of the ISR element. Theoretically, any active action required to provide force protection for the main body will be conducted internally and with minimum exertion. Therefore, the Objective Force concept anticipates no requirement for separate and specialized security forces. On the contrary, combat battalions are expected to perform rear area security operations as one of its secondary tasks.⁶⁵

Economy of Force

As with security, the Objective Force concept considers economy of force as an inherent capability of the future tactical combat formation. Units of action are expected to generate their own, internal economy of force by “[c]losely synchronizing battle rhythm with an accelerated

⁶³ Ibid., p.27. This passage further states, “Overall, the Objective Force will possess robust, inherent force protection and survivability capabilities integrated holistically to provide an effective, layered solution set to the complex threat environment... Decentralized operations by highly mobile maneuver elements moving rapidly along separate routes provide force protection against enemy acquisition and engagement, while advantages in [situational understanding], ISR and tactical stand-off engagement further enable maneuver units to avoid/negate threat capabilities.”

⁶⁴ Ibid., p.28

⁶⁵ Ibid., p.40

sustainment rhythm...”⁶⁶ According to Field Manual 3-0, *Operations*, economy of force is accomplished when a commander:

Allocate[s] minimum essential combat power to secondary efforts. Economy of force is the reciprocal of mass. It requires accepting risk in selected areas to achieve superiority – overwhelming effects – in the decisive operation. Economy of force involves discriminating employment and distribution of forces. Commanders never leave any element without purpose. When the time comes to execute, all elements should have tasks to perform.⁶⁷

Each of these conditions is met by the described method of employment for the unit of action included in the *Objective Force Concept*. However, the capabilities necessary to achieve this end are not currently available.

The anticipated differences between the capabilities posited for the Objective Force and those of the current force provide various means to mitigate the requirement to dedicate forces to the economy of force role as it is known today. The capabilities of the Objective Force are intended to sustain continuous operations, maximize tactical stand-off engagements and radically shift the desired force ratios for offensive and defensive operations thereby changing both the necessity for and means of conducting economy of force operations.⁶⁸ Dedicating forces to secondary efforts will rarely be necessary with clear understanding of enemy dispositions and intentions. Rather than engaging the enemy in secondary operations, economy of force is achieved through avoiding unnecessary contact and using only the required force to achieve the desired endstate. Forces not directly involved in accomplishment of the current mission perform sustainment operations that allow the brigade or division to sequence units into a continuous fight and maintain an

⁶⁶ Ibid., p.8

⁶⁷ Field Manual 3-0, *Operations*, (Headquarters, Department of the Army. Washington, DC, June 2001.), p.4-13.

⁶⁸ TRADOC Pam 525-3-91 (Draft), p.9. This point is further illustrated on p.15 which states “Superior [situational understanding] will enable the combined arms brigade and its subordinate battalions to focus on ‘profitable fights’ ...[and] will reduce wasted motion, mitigate risks, and enable forces to move faster and more boldly, but with proper appreciation for the unknown.”

unprecedented tempo of operations. While these capabilities may very well eliminate the need to conduct an economy of force in the future, they do not yet exist.

The Objective Force is the endstate. The operational concepts described are inextricably linked to, as of yet, unrealized technological advances. Nevertheless, the concepts discussed provide a flexible map for the direction the army intends on moving on its path toward the Objective Force. The transformation, though necessary, will not occur overnight and requires balancing the need for near-term military capabilities with the need to develop and fund an Objective Force capable of fighting and winning across the spectrum of conflict. As expressed in the latest Quadrennial Defense Review:

Without transformation, the US military will not be prepared to meet emerging challenges. At the same time, it would be imprudent to transform the entire force all at once. A balance must be struck between the need to meet current threats while transforming the force over time.⁶⁹

This balance is struck through the recapitalization of the current or Legacy Force in conjunction with the development of an Interim Force, moving toward the final transformation goal.

Getting to the Objective: The Interim Force

The Interim Force is intended to provide the doctrinal and organizational linkage between the current Legacy Force and the Objective Force. The Army's Transformation Campaign Plan states:

The Interim Force is a transition force that fills the strategic near-term capability gap that exists today – one that seeks the Objective Force to the maximum extent feasible, but leverages today's state of the art technology together with modernized legacy forces as a bridge to the future.⁷⁰

⁶⁹ Quadrennial Defense Review Report, (Department of Defense, Washington, DC, 30 September 2001.), p16

⁷⁰ *United States Army Transformation Campaign Plan*, (Headquarters, Department of the Army. Washington, DC, 10 April 2001), p.9

As a bridge between current capabilities and the Objective Force, the Interim Force provides not only interim capabilities but also a test bed for doctrinal and organizational development. An essential element of the Interim Force is the Reconnaissance, Surveillance and Target Acquisition (RSTA) squadron.

RSTA squadrons are intended as the bridge between current cavalry formations and the assumption of traditional cavalry roles by a combination of ISR elements and units of action in the Objective Force. As the bridge between current and future needs while facilitating the eventual transition of cavalry roles, it is necessary to understand the doctrinal and organizational effects attached to the RSTA squadron.

RSTA and Legacy Force Cavalry

RSTA formations provide only a limited number of the capabilities currently resident in legacy cavalry units. As illustrated by its name, the RSTA squadron is organized and equipped primarily for reconnaissance and surveillance. RSTA squadrons, from the perspective of current doctrine, are designed to execute only one of the three traditional functions of cavalry.⁷¹

RSTA squadrons are organic to the Interim Brigade Combat Teams (IBCT) and are planned for inclusion in the Interim Division (IDIV) organization, in place of a divisional cavalry squadron. Like current divisional cavalry, the RSTA squadron performs reconnaissance through the employment of various means. These means include reconnaissance by stealth and fighting for information or aggressive reconnaissance. While stealth is the preferred method for both RSTA and legacy cavalry formations there are times when a unit must fight for information. The difference between these formations is the capability to internally transition between the differing methods of reconnaissance.

⁷¹ Field Manual 3-0, p.3-2

Cavalry forces possess robust means to perform both types of reconnaissance.⁷² On the other hand, RSTA squadrons although expected to perform aggressive reconnaissance as necessary, possess on limited means to do so. Fighting for information by the RSTA squadron is a high-risk mission unless significantly augmented. It requires reinforcement by both combat and combat support assets well beyond those organic to the squadron.⁷³ Organizationally, the RSTA squadron is primarily equipped for passive means of reconnaissance and surveillance. The limited internal offensive capability of the squadron not only inhibits its ability to execute traditional reconnaissance tasks; it also reduces the unit's capability for the remaining functions – security and economy of force.

The RSTA squadron's lack of firepower, in comparison with legacy cavalry units, greatly limits its ability to perform security tasks. Under combat conditions, a legacy cavalry squadron is able to guard a division's flank augmented only with fire support.⁷⁴ "In those situations, the [RSTA] squadron will have to be augmented by [mobile, protected direct fire systems], attack aviation and be supported more fully by indirect fires and other joint platforms."⁷⁵ The extensive augmentation required to execute tasks beyond that of passive reconnaissance run contrary to economy of force. Legacy cavalry forces are organized and equipped to routinely execute their traditional roles without reinforcement, therefore the execution of these roles are, in and of themselves, an economy of force. Conversely, the RSTA squadron is not anticipated to have to fight for information and must be reinforced to execute any traditional cavalry mission beyond surveillance and passive reconnaissance. Unlike the conceptual Objective Force, the RSTA squadron does not fulfill the requirements of the traditional cavalry roles nor does it negate them

⁷² Ibid.

⁷³ *IBCT O&O Concept, version 4.0*, (Headquarters, United States Army Training and Doctrine Command, Fort Monroe, VA, 30 June 2000.), p.38

⁷⁴ Field Manual 17-95, pp.4-21 – 4-27

⁷⁵ *IBCT O&O Concept, version 4.0*, p.40

through technological innovation. As a result, the Interim Force will likely have to compensate for this lack of capability by task organizing its close combat forces to meet these requirements.

RSTA and the Objective Force

Under the Objective Force concept, RSTA formations transform to become one of the elements within the larger system responsible only for C4ISR. The key capabilities upon which the Objective Force depends is obtaining and maintaining superior situational understanding. As both a current combat force and a bridge to the future force, “the RSTA squadron must excel in both the traditional role of reconnaissance, surveillance and target acquisition of enemy forces and in the broader mission of providing situational understanding of the operational environment...”⁷⁶ Through a process of continuously leveraging evolving technologies, the RSTA squadron is intended to provide lessons-learned and input for doctrinal development throughout the transformation process. Once science and technology solutions are available to fully bridge the capabilities gap between current forces and the Objective Force, RSTA itself will become a set of inherent capabilities within the “system-of-systems.”

While attempting to bridge the doctrinal gap between the current force and the Objective Force, the Interim Force in general and the RSTA squadron in particular, fill only a niche in the capabilities gap. The current *Transformation Campaign Plan* clearly identifies the shortcomings of the RSTA organization in combat today based on the lack of necessary advanced technologies.⁷⁷ Consequently, the traditional functions of cavalry are only fully addressed in the Legacy Force and in the concept of the Objective Force. The Interim organization adequately addresses these necessary functions, but only under limited missions and specific conditions.

⁷⁶ Ibid., p.37

⁷⁷ United States Army Transformation Campaign Plan, p.9. The document specifically states, “The Interim Force is designed with key capabilities and characteristics, which provide distinct advantages in deployment in Small-Scale Contingency (SSC) operations and, with augmentation, provides significant contributions in Major Theater of War (MTW) employment.”

Summary

The examination of the *Objective Force Concept* and the Army's plan for transformation was conducted in an effort to identify doctrinal and organizational assumptions that are guiding the current evolution of cavalry. Through this inquiry, it is clear that the doctrinal and organization assumptions involving traditional cavalry roles are establishing the current direction of cavalry force modifications in the Interim force and toward the endstate Objective Force.

Technological dominance over potential enemies provides the basis for the organizational and doctrinal assumptions related to the future of cavalry forces in the United States Army. This distinction in the technological sophistication between US forces and our potential adversaries integral to the success of the Objective Force. When or if, it is realized the inherent capabilities of the force as a whole to assume most of the functions associated with the traditional roles of cavalry. The capabilities postulated in the *Objective Force Concept* provide the basis of three important assumptions related to the future of cavalry.

First, future technological means will provide accurate, relevant information in the vast majority of situations without requiring aggressive reconnaissance or further development of the situation. Second, economies of force will not be necessary since secondary efforts will be avoided through situational understanding and enhanced mobility. Lastly, dominant situational understanding drastically, if not completely, eliminates the need for forces undertaking the traditional security mission. The current *Objective Force Concept* postulates that, upon completion of transformation, the traditional cavalry roles of security and economy of force will become inherent functions of the "system-of-systems." Nevertheless, the role of reconnaissance will continue, with a more narrow scope, as the primary task set for the inheritor of cavalry – the Objective Force ISR element.

These important assumptions pertaining to the roles of cavalry in the Objective Force have distinct implications the Army attempts to bridge the gap between the current force and its capabilities with those assumed in the Objective Force. The assumptions related to the future of

reconnaissance, security and economy of force are guiding the organizing, equipping, and training of the Interim cavalry force – the RSTA squadron. Since the technologies necessary to bring these assumptions to fruition are not currently available, the implications of directing the transformation along these lines must be critically evaluated.

While, these assumptions provide the impetus for bold doctrinal and organizational changes relating to the future of cavalry, evaluation of these assumptions in concert with those of the future operating environment provide the basis for determining whether or not the current transformation plan of cavalry is the best course of action.

CHAPTER FIVE

ANALYSIS OF THE ASSUMPTIONS

We have seen that in criticism it is vital to reach the point of incontrovertible truth; we must never stop at an arbitrary assumption that others may not accept, lest different propositions, equally valid perhaps, be advanced against them leading to unending argument, reaching no conclusions, and resulting in no lesson.

- Carl von Clausewitz⁷⁸

This chapter provides an analysis of the key assumptions relating to the future of cavalry forces in the United States Army. These assumptions form the basis of the *Transformation Campaign Plan* and the *Objective Force Concept* pertaining to cavalry roles and functions. Since many of the planned changes involving cavalry depend on the realization of these assumptions, an assessment of their validity is essential in assessing the completeness of the existing transformation plans and concepts.

The Enemy and Battlefield of the Future

Without question, the ability to provide relevant information about the enemy and the physical aspects of the battlefield are the hallmarks of reconnaissance. Furthermore, this information is essential in effectively planning and evaluating the need for security operations and executing combat as an economy of force. The planned transformation of Army forces and the anticipated capability and organizational answers to traditional cavalry functions are inextricably linked to assumptions about the future threat and battlefield. The three central assumptions inherent in the postulated *Future Operational Environment* are: the lack of a predictable, “templateable” enemy, the “complex” nature of places the enemy will choose to fight and the enemy’s inability to gain technological parity with the US forces. These assumptions have shaped the concept of future force design and provide a guide for the manner in which

⁷⁸ Clausewitz, Carl von. *On War*. Edited and translated by Michael Howard and Peter Paret. (Princeton, NJ: Princeton University Press, 1989.), p.157.

traditional cavalry roles will be accomplished in the future. Evaluation of each of these assumptions provides valuable insight into determining whether or not the Army is adequately assessing and attempting to mitigate inherent risk.

Assumption: The Patternless Enemy

As revealed in the previous chapter, the paradigm of likely adversaries following predictable and established doctrinal models began to crumble along with the Berlin Wall. Two factors seem to have affected the *status quo* in the predictable behavior of threats to the United States Army, the end of the Cold war and America's ascendancy in military technology. These factors are illustrated in the Army's vision of the future threat and provide a lucid argument for how the future enemies of the United States will evolve.

The predicted evolution of future threat organizations and their resulting tactics appears reasonable and accurate. With the end of the Cold war, many if not all of the nations with adversarial relationships with the United States lost their military benefactor – the Former Soviet Union. The equipping and training of potential threat forces did not survive the dissolution of the Union of Soviet Socialist Republics (USSR). Although military training programs may have been curtailed in many nations, Russia continued military sales as a for-profit enterprise. Consequently, the high degree of consistency in training, organization and doctrine displayed by likely adversaries began to evaporate.⁷⁹ Without a consistent supply of military equipment from the USSR and her allies, many of these potential threats began a market driven procurement policy. They bought equipment they could afford from any nation that would sell it, whether openly or on the black market. The absence of a well understood and applied military doctrine coupled with a hodgepodge of military equipment has produced threats far different from the Soviet clones of the past.

⁷⁹ Future Operational and Threat Environment: A View of the World in 2015, p.3

Both current and former military leaders, as well as respected writers, share similar predictions about the future threat environment. Robert Kaplan discusses the blurring of definable lines in warfare in *The Coming Anarchy*. He asserts that patterns of war will follow less militarily predictable lines such as those of religious, social or ethnic significance.⁸⁰ Major General Robert Scales, Commandant of the United States Army War College at the turn of the twenty-first century, also offers complementary predictions. He warns that American military dominance compels future adversaries to adapt and develop techniques to defeat our ability to anticipate their actions.⁸¹ An essential adaptation of future threats against the United States Army is to appear patternless.

These threats will continue to be forced to adapt their methods to the resources available and the threats they perceive. Tactics, techniques and procedures will be developed for effective use against a technologically superior enemy that capitalize on the cultural strengths of their own people. These tactics will incorporate the use of modern military equipment and unconventional methods.⁸² Since these tactics will have little foundation in existing doctrines and rely heavily of the personality of the individual commander, the likelihood of discerning patterns and predicting actions becomes extremely difficult.

The military powerhouse of the early eighteenth century, Napoleon's France, experienced the neutralizing effects of a "patternless enemy" during the campaign in Spain. As noted historian David Chandler illustrates, an enemy that failed to fight in a predictable manner frustrated the world's military super power. France was denied victory "...by guerrillas who refused to come down into the open plains but clung to their mountain fastnesses and there defied all efforts to destroy them, in the mean time causing a heavy toll of French casualties."⁸³ The Japanese in

⁸⁰ Kaplan, Robert D. *The Coming Anarchy*. (New York: Random House, 2000), p. 48-50

⁸¹ Scales, Robert H. Major General. *Future Warfare - Anthology*. (Carlisle Barracks, PA: US Army War College, 1999.), p.35

⁸² Ibid. p. 2-4

⁸³ Chandler, David G. *The Campaigns of Napoleon*. (New York: Macmillan Publishing Company, 1966.), p.660

China and the American Army in Vietnam experienced similar enemy innovations where the efforts of the stronger and more sophisticated forces were frustrated.⁸⁴ Adopting tactics that are difficult to discern has historically been a method used by weaker enemies to counter their adversary's military dominance.

The desire by weaker adversaries to avoid toe-to-toe confrontation with militarily superior foes is well documented through history and supported in contemporary thought. Consequently, a pattern of adaptation has occurred over time. Less capable forces have and will continue to develop techniques that mitigate the strength of their stronger enemy. The use of dispersion, asymmetry and unpredictable methods is time tested and proven. The author concludes, the assumption that this evolution will continue into the future seems quite valid if not unavoidable.

Assumption: Fighting in Complex Terrain

Combat in the future will take place in complex, inhospitable and difficult environments. Yet one fact remains, the weaker opponent has always sought advantage by the selection of these types of terrain. A survey of American military operations during the past sixty years highlights that fighting in complex terrain and environments is common if not the norm.⁸⁵ From the Pacific Theater in World War Two to Operation Just Cause in Panama, the Army has been forced to pursue a weaker opponent into complex terrain. The only recent large-scale anomaly to this pattern of operations in difficult, complex terrain was the 1991 war in Iraq.

The success of the United States and her allies against Iraq on the open, relatively featureless terrain of the desert sent a clear signal to future adversaries. Fighting the Americans on their own

⁸⁴ Scales, p.35-43

⁸⁵ Army and Marine Corps operations in the Pacific Theater during the Second World War were almost exclusively fought in jungles. The India-Burma Theater coupled dense jungles with high mountains. Operations in Europe ran the entire spectrum of complex environments from the mountains of Italy to the *bocage* of Normandy to the bloody street fighting in Aachen. During the last years of the war, much of the fighting was house-to-house in the urban complexes of western and central Europe. Operations in Korea saw a return to the mountains and hills, while fighting in Vietnam returned to the jungles. In both conflicts, major engagements were fought in large urban areas such as Seoul, Saigon and Hue. More recent operations in Panama and even stability operations in the Former Yugoslavia have been marked by a full range of complex environments from large urban centers, to jungle and mountains.

terms and allowing for the maximum use of high technology weapons is tantamount to suicide. The relative weakness of many potential threats in the future will likely lead to the use of complex terrain as a matter of survivability.⁸⁶ But even beyond the desire for increased protection provided by complex terrain is the opportunity to cause casualties using what Clausewitz calls the stronger form of war - the defense. This tactic is not new and it has been used effectively from the mountains of Spain against Napoleon to the urban sprawl of Chechnya and mountainous caves of Afghanistan.

Historically, enemies of the United States have fought in complex terrain as a matter of necessity based on their strategic goal – control of landmasses or sea-lanes in the case of the Germans and Japanese during World War Two. Today, enemies of the United States will fight in complex terrain also. But, this decision is not wedded to political or economic reasons as much as the need to survive and mitigate their own technological inferiority. Potential adversaries will attempt to negate America's asymmetric advantages and force a fight on more symmetric terms through the use of complex environments. This forced symmetry provides the enemy opportunity to cause large numbers of casualties and attack at our perceived vulnerability, our will to fight.

Beyond contributing to sound tactics for a weaker combatant force, fighting in complex terrain is likely to become a matter of course due to changing demographics. According to Robert Kaplan, rapid urbanization of both the developed world and the developing world is increasing at an alarming pace. The turbulent West African country of Ivory Coast exemplifies potential, future hot spots for the United States Armed Forces. With over fifty-five percent of its population already living in large urban shantytowns this figure is expected to nearly triple within the next two decades.⁸⁷ As this trend continues throughout Africa, Asia and the Caucasus, future operations in these regions will involve actions in large urban areas. Considering the expanding

⁸⁶ Future Operational and Threat Environment: A View of the World in 2015, p.4

⁸⁷ Kaplan, p.11

global urbanization, fighting on the open plains of a distant land is not likely and recent history seems to confirm this view.

This prediction is supported by history and is even occurring now in Russia, Colombia and Afghanistan. A small dedicated force of separatist rebels in Russia thwart actions by militarily superior forces in Chechnya. A few thousand guerrillas have held off the Colombian Army for decades from the cover of mountains and jungles. Even the military technological superiority of the United States has recently been refocused to support the use of infantrymen and special operations troops to ferret out Taliban and Al Quaida terrorists from the mountains and caves of Afghanistan. The assumption that future battlefields will consist of differing and complex terrain seems without challenge.

Assumption: The Threat without Technological Parity

An essential component of the current *Objective Force* concept and its vision for meeting the requirements of reconnaissance, security and economy of force is the United States' ability to sustain technological superiority over its potential threats. The FOE assumes that this sustained technological superiority will provide the United States armed forces significant asymmetric advantages over any potential adversary well into the future. Likewise, future enemies will attempt to answer these asymmetric advantages by creating an asymmetry of their own.⁸⁸ It is entirely likely that many potential threats to the United States will adapt in this manner as they have in the past, but not all.

⁸⁸ The United States Army Battle Command Training Program (BCTP) World Class Opposing Force (WCOPFOR) portrays a common example of this line of thought. The WCOPFOR attempts to counter the technological superiority of US fixed wing and rotary wing attack aircraft, not by a symmetric solution of using similarly advanced aviation systems, but through the use of lower cost "niche" technologies. In this case, the proliferation of high quality shoulder fired anti-aircraft missiles. The WCOPFOR replicates a complex capabilities-based enemy for Army Corps and Division during training exercises. These exercises simulate combat using interactive computer systems and models. This approach is logical and proven in history many times since the use of the pike to counter heavy horse cavalry.

An asymmetric solution to an adversary's asymmetric advantage is an act of necessity. This pattern presumes, in the case of the FOE, an enduring American hegemony in the application of a high technology military force. This assumption, however, does not find its support in history, military theory or in the opinions of many modern writers.

Historically, hegemonic military superiority is fleeting. The military superiority of the armies of Frederick the Great and Napoleon I, though unstoppable and without peer, maintained a definite advantage over their adversaries for only a relatively short period. The Prussian preeminence established in the campaigns of 1757-8 was greatly diluted if not lost within six years after Frederick's methods were copied by most of Europe's armies. Napoleon's military dominance established through his campaigns between 1800 and 1805 began to fade by 1809 due in great part to the modernization of his foes.⁸⁹

The example of these two great military powers is instructive and not isolated. Although both Prussia and France had no military peer for windows of time, these periods were far shorter than was anticipated by Frederick, Napoleon or their enemies. Likewise, their loss of hegemony was not based on innovative, asymmetric means devised by their competitors but rather through achievement of symmetric parity.

This notion of a natural trend toward military parity is reinforced through the writings of military theorists. In "Book Five" of his classic work *On War*, Carl von Clausewitz describes the nature of battle and of military forces. In doing so he explains that although superiority in technology, training and education of soldiers provides advantage, these advantages are temporary and therefore not worthy of inclusion in the development of military theory.⁹⁰ Similarly, the Baron de Jomini clearly assumes technological parity between combatants throughout his theoretical treatise *The Art of War*. Even the theories of Polish economist Ivan

⁸⁹ Keegan, p.386-392; Cross, 120-142; and Epstein, Robert M., *Napoleon's Last Victory: 1809 and the Emergence of Modern War*. (Fort Leavenworth, KS: United States Army Command and General Staff College, 1992.), p.284-6.

⁹⁰ Clausewitz, p.282-4

Bloch, published in the 1899 *The Future of War*, regarded military technological equity as unavoidable since temporary advantage would drive adversaries to become peer competitors.⁹¹

The emergence of a peer competitor is possible, if not likely. As *New York Times* columnist Thomas Friedman explains in his book *The Lexus and the Olive Tree*, the current globalization of the world through free-markets and information technology proliferation is removing barriers. The small borderless world described by Friedman is much more conducive to leveling the playing field technologically and militarily than it is to sustaining a hegemon and varying degrees of less capable competitors. Globalization changes the dynamic from nations without an ability to compete to a matter of the nation's will to compete. This position is further supported RAND's National Defense Research Institute which stated, "The prevailing pattern in modern history has been that, eventually, competitors to dominant states emerge, and sometimes the emergence alters the hierarchy in the international state system."⁹²

Not only is technological supremacy likely to be overcome given the norming nature of globalization, but the emergence of a peer competitor to the United States is quite possible within the next twenty years.⁹³ These ideas provide credible question to the notion that any modern nation, including the United States, could plan a transformation of its military based on assuming distinct technological advantage for much beyond the near future.

Traditional Cavalry Roles and Functions in the Objective Force

The concepts currently proposed for the development of the Objective Force assume a radical break from the methods and principles of the past. Using highly sophisticated C4ISR systems and networks, the Army intends on drastically changing the way units are organized and equipped to meet the enduring requirements currently assigned to the cavalry. The roles of reconnaissance,

⁹¹ Bucholz, Arden, *Moltke, Schlieffen and Prussian War Planning*, (Oxford: Berg Publishing, Inc., 1991.), p. 211-2

⁹² Szayna, Thomas S., et al. *The Emergence of Peer Competitors: A Framework for Analysis*. (Arlington, VA: RAND Publishing, 2001.), p.1

⁹³ Ibid. p. 2, 109-112

security and economy of force are, for the most part, to be subsumed by the functions of a general-purpose system of systems. Under the *Objective Force Concept*, situational understanding will allow security and economy of force to become intrinsic aspects of the future Unit of Action while negating the need for aggressive reconnaissance. This idea can only become a reality with the advent of as yet unrealized technologies.

While challenging the possibility or probability of developing the required technologies to achieve these ends is beyond the scope of this monograph, assessing the current technological means available to the interim force is necessary. As stated in December 2001,

The Interim Brigade Combat Team (IBCT) serves two primary roles. In the near term, it satisfies present-day strategic requirements...In the far term, the IBCT will serve as a proving ground for developing the doctrine, tactics and techniques of the Objective Force.⁹⁴

Therefore, the reliability of the “lessons learned” from the RSTA Squadron of the IBCT are germane to assessing their impact on the future of cavalry in the United States Army.

The *Objective Force Concepts*’ assumptions involving traditional cavalry functions provide the framework for determining the need for special-purpose “cavalry” forces in the future. The ideas proposed for organization and employment of the interim force, and by extension the Objective Force, “cavalry” organizations are relegated “to collect[ing] intelligence and provid[ing] precision strike capabilities.”⁹⁵ This concept neglects two essential cavalry functions: security and economy of force, while inferring that reconnaissance can be conducted effectively either through passive means and/ or out of contact with the enemy. The analysis of these assumptions provides salient evidence in determining the need for specialized cavalry units in the future.

⁹⁴ Association of the United States Army, Institute of Land Warfare, “Issue Paper 5: The Interim Brigade Combat Team”, December 2001, Available at <http://www.ausa.org/ilw/ibct.pdf>; Internet accessed 5 Feb 2002.

⁹⁵ Ibid.

Assumption: Passive Reconnaissance

Cavalry units have always relied upon both passive and active means in fulfilling their role of providing timely and accurate battlefield information to the commander. Passive means, primarily surveillance techniques, rely upon visual observation conducted in concert with various electronic sensors. Passive methods of reconnaissance depend upon stealth and avoidance of direct contact with the enemy. On the contrary, active or aggressive reconnaissance techniques demand contact with the enemy, albeit not decisive engagement. Historically, the balanced use of these methods have formed the cavalry role of reconnaissance. The combination of methods remains inextricably linked in the current or legacy force.⁹⁶

Interim Force cavalry organizations attempt to break the linkage between combining active and passive means to achieve required reconnaissance results. The RSTA squadron of the IBCT is manned and equipped almost exclusively for passive reconnaissance. The organization's three reconnaissance troops have sufficient reconnaissance by stealth capability, but have no true anti-armor capability like that resident in legacy cavalry organizations. The current interim armored vehicle (IAV) is a wheeled, personnel carrier armed with small arms for local protection. The lack of firepower available to the ground reconnaissance troops greatly limit the unit's ability to conduct reconnaissance by fire or mounted reconnaissance requiring speed over stealth. Although the cavalry organizations of the interim force are equipped with vast arrays of ground sensors, target acquisition radars and other electronic surveillance assets, they almost exclusively support the application of passive means for reconnaissance.

The interim plans for cavalry further neglect the use of aviation systems capable of aggressive reconnaissance or fighting for information. The airborne reconnaissance capabilities planned for the RSTA squadron are limited to unmanned aerial vehicles (UAV). The UAV provides a more active element to reconnaissance than pure surveillance while greatly reducing

⁹⁶ For a more complete description of passive and aggressive reconnaissance see; United States Army Field Manual 17-95, Chapter 3.

risk to soldiers and reducing the requirement to manage crew endurance. While reducing risk to ground troops or cavalry aviators, UAVs are limited by the same conditions as any other aircraft. UAVs are limited by the effects of inclement weather, limited station time in the objective area and they are vulnerable to enemy air defense systems.

Additionally, UAVs have a much more restricted field of view and are less flexible than that of manned aircraft. UAVs are restricted to viewing only what is within the direction its optics are oriented. Aeroscouts possess many redundant means of observation, from various on-board optics systems to human eyes. Scouts operating from rotary wing aircraft are better able to see and access enemy actions on the battlefield, while retaining the ability to adjust their reconnaissance methods to accomplish the mission.

The lack of an air-breathing aeroscout capability in the IBCT RSTA squadron further limits the organization's ability to conduct reconnaissance that is more aggressive. Current and future models of rotary-wing scout platforms⁹⁷ provide additional means for armed reconnaissance not currently planned for Army UAVs. Any airborne reconnaissance capability provides an advantageous additional dimension to the effort.

A complimentary and coordinated use of air and ground systems should afford the ability for both passive and active means. These capabilities are resident in current cavalry organizations, but are not included in the Interim Force, based on anticipated technological advances not yet realized.

As the RSTA squadron attempts to lead the Army to doctrinal and organizational decisions for the Objective Force, the assumption that passive means of reconnaissance will meet the requirements of the commander for accurate and timely information is critical. Analysis of this assumption based on the future tends to discredit it. If the potential threat environment of the future becomes a reality, it will still require aggressive methods of reconnaissance. Although the

⁹⁷ Reference is made to the current airframe used for Scout aviation, the armed OH-58D Kiowa Warrior and the system currently in development, the RAH-66 Comanche.

United States maintains a technological superiority over the threat, he will develop techniques to asymmetrically foil passive means of reconnaissance. The threat, knowing how passive ISR systems work, will invest in “niche” technologies to spoof electronic systems or use tactics that counter the methods of detection.⁹⁸ Additionally, any enemy with a seemingly patternless method of tactical employment must be reconnoitered aggressively to force reaction. This aggressive reconnaissance helps to more quickly identify enemy vulnerabilities and force reactions that allow for pattern identification and future anticipation of responses. Many of the responses anticipated by the threat require combinations of active and passive means to uncover the truth. Similarly, if estimations of the future threat are wrong and peer competitors do arise, capabilities for both passive and aggressive means reconnaissance will remain as critical as they were in the past. Therefore, the assumption that completely passive means of reconnaissance will meet mission requirements is likely to prove errant, whether or not US Forces have technological superiority.

Assumption: Economy of Force is Unnecessary

Economy of force has been a constant principle of war since long before the Baron de Jomini articulated it. Few seasoned military professionals question the necessity to accept risk at selected times and places during battle in order to increase the probability of success at their chosen point of decision. This realization is even more acute on the complex modern battlefield occupied by smaller forces and more limited resources.

Historically, cavalry units have retained the function of providing commanders an economy of force option. Current doctrine states:

Cavalry is, by its role, an economy of force. The flexible capabilities of cavalry allow the commander to conserve divisions and brigades for engagement where he desires. The combat

⁹⁸ This type of asymmetric response is currently demonstrated by the WCOPFOR, who understanding that certain speeds of movement are required for electronic intelligence (ELINT) systems to acquire moving target indicators (MTI), secretly reposition forces by moving at night at very slow speeds.

power of cavalry units, in particular, makes them ideal for offensive and defensive missions as an economy of force.⁹⁹

This idea holds true in the legacy force, but is beginning to disappear from the concepts postulated for Objective Force and capabilities resident in the interim cavalry organization.

Although the need for economies of force seems unchallenged by military theorist from Clausewitz to J.F.C. Fuller, its importance seems to be waning in the concepts of the Objective Force. The potential for establishing dominant “situational understanding” through networked C4ISR systems is anticipated to allow Army forces to “*see first, understand first, act first and finish decisively*.”¹⁰⁰ This concept lends itself to the assumption that economies of force, as we know them today, will not be necessary. Forces distributed across the battlespace will be able to maneuver out of enemy contact and mass their effects at the decisive point on the battlefield while avoiding indecisive combat actions. Unnecessary engagements, those not directly related to the decisive tactical action, can and will be avoided. Therefore, formations previously manned and equipped to fight outnumbered for periods of time in order to shape the battlefield will not be necessary because that fight need not take place.

The elimination of the need to dedicate combat organizations to accomplish economies of force relies upon achieving dominant situational understanding. The Objective Force’s ability to gain and sustain situational understanding is directly related America’s ability to sustain military technological hegemony. Even if the anticipated technologies come to fruition, they only provide advantage as long as like capabilities are denied from potential foes. That argument aside, such technologies are not available to the current legacy force nor the interim organizations. Although US Forces do possess C4ISR systems far superior to those used by any other nation, the products

⁹⁹ Field Manual 17-95, p.1-1

¹⁰⁰ See United States Army White Paper, *Concepts for the Objective Force*, Headquarters, Department of the Army, Washington, DC, November 2001. Accessed 11 January 2002 at <http://www2.army.mil/features/whitepaper/objectiveforcewhitepaper.pdf>.

received from them only enhance friendly situational awareness, but do not yet provide dominant situational understanding.¹⁰¹

The gap between situational understanding and dominant situational understanding is exactly why economies of force remain relevant and will well into the future. The presumption of information dominance over a potential adversary and a complete factual understanding of all aspects of the entire battlespace provide no impetus for the mitigation of risks. If the commander knows everything he fears nothing and is able to devise a plan devoid of risk. This entire premise, while conceptually rational, completely dismisses the Clausewitzian dicta of “fog” and “friction.”¹⁰² The concepts of the Objective Force attempt to eliminate “fog” through technology, while disregarding the “friction” inherent to complex systems. Were Clausewitz alive to comment on this assumption by the authors of the *Objective Force Concept*, he would undoubtedly warn them of the unseen and unpredictable birth of new elements of “fog” and “friction” born from the exact systems they end to eliminate it with.

No matter how well a system, or in this case a “system-of-systems” is constructed, “fog” and “friction” will remain to some degree present. With these elements also comes risk that must be addressed by the commander in order to increase the probability of success while minimizing the opportunity for catastrophic failure. These facts considered the likelihood that economies of force will disappear in the near future is quite unlikely and the need for specialized forces to meet these requirements will likely remain necessary.

¹⁰¹ FM 3-0 acknowledges that current surveillance systems “...may not be able to meet some requirements or collect information with adequate accuracy and level of detail.”(p.11-10) The reduced level of situational understanding derived from this partial information, while likely superior to that of the enemy, does not necessarily “...allow commanders to avoid enemy engagement areas, while concentrating fires and maneuver at the decisive place and time.” (p.4-10 and 4-11).

¹⁰² See Carl von Clausewitz, *On War*, Book One “On the Nature of War”.

Assumption: Security becomes Inherent

Related to the assumption regarding economies of force, the *Objective Force Concept* infers that security will become inherent to the networked system of systems referred to as the Unit of Action. The concept proposes that the Unit of Action or tactical organization,

will leverage integration of lighter, more effective ballistic protection (composite materials) with active and passive protection systems to enhance survivability...Ground platforms will leverage the best combination of: low observable technologies, on-board immediate multi-spectral capabilities, long range acquisition, early discrete targeting, shoot first every time, and target destruction each time we pull the trigger. Platforms will provide improved early warning and defeated of enemy ground and air launched conventional and smart weapons.¹⁰³

Beyond these internal survivability capabilities predicted for the future force, dominant situational understanding allows the force to remain widely dispersed while retaining the ability to rapidly and stealthily avoid enemy contact. Conceptually, the Objective Force will be able to avoid most enemy contact as a result of dominant situational understanding while defeating attacks that do occur through combinations of active and passive countermeasures. While theoretically sound, if American is able to sustain technological supremacy over future threats, this suite of capabilities is not currently technologically feasible. These technological limitations relate to additional constraints on current forces.

Legacy and interim forces remain constrained by terrain. Limitations on the capabilities of line-of-sight communications systems, the physical ranges of weapons systems and need to consolidate to carry out sustainment processes prevent maximum dispersion of forces. While future systems may allow for radical improvements, ground forces will remain constrained by the physical make up of the battlefield and limited by ranges of their weapons systems.

Some degree of force consolidation is unavoidable no matter how capable the system. This is further accentuated by the anticipation that future battlefield will become more complex.

¹⁰³ United States Army White Paper, *Concepts for the Objective Force*, p.15

Complex terrain that limits mobility, forces units to operate in limited portions of the battlespace and reduces opportunities to maximize dispersion. Terrain, whether man made or natural, that interferes with line-of-sight communications devices can force units to operate more closely together to sustain connectivity. These limitations provide vulnerabilities that the enemy will attempt to exploit both symmetrically and asymmetrically.

Historically, the United States and other nations, both friend and foe, have sought to exploit adversaries when they were most vulnerable. Legacy forces preparing defensive positions, conducting sustainment operations or positioning for an attack provide opportunities to enemy commanders. As a counter to these weaknesses, security operations are conducted to provide the friendly commander reaction time, maneuver space and protection.¹⁰⁴ Cavalry organizations have traditionally been charged with supporting the main combat forces by providing security. Security is provided through a combination of active and passive means of reconnaissance and surveillance coupled with limited offensive and defensive actions. Naturally, cavalry organizations being primarily manned, equipped and trained for reconnaissance and capable of providing economies of force were well suited for the mission.

However, this is not true of the interim cavalry organizations. Although quite capable of conducting surveillance and passive reconnaissance RSTA squadron are incapable of preventing the enemy from interfering with the actions of the protected force without substantial augmentation. The lack of offensive capability organic to the RSTA squadron is linked to its role as a bridge to the Objective Force, but its current organization and potential adversaries makes it an unlikely candidate for use in security roles.

The technology necessary to allow for the adequate dispersion and the rapid response capable of eliminating the need for separate security forces does not exist today. The probability that it will in the future also remains in question. Unless the promised technology is fully realized,

¹⁰⁴ See FM 17-95, Chapter 4 for additional information on the current doctrine for security operations.

denied from potential enemies and the battlefields it is employed on are devoid of limiting terrain the prospect of forgoing the use of some sort of security force is highly improbable. The predictions of the future offered in the FOE ensure that we will fight in terrain that limits mobility and options for employment. The FOE further warns that future enemies will use asymmetric means to compel forces to consolidate and expose vulnerabilities. It is possible, if not likely, that the United States will see the rise of a technological peer that could threaten her hegemony. The rise of a peer competitor would eliminate many of America's current and anticipated asymmetric advantages and potentially lead to combat on symmetric terms. Any one of these instances would likely require the battlefield commander to dedicate part of his force to securing the rest during heightened periods of vulnerability.

Summary

Decisions made today are determining the path the United States Army will follow in the future. This path described in the *Objective Force Concept* and the *United States Army Transformation Campaign Plan* are based on several important assumptions. The Army, as a complex system,¹⁰⁵ hinges the success of its transformation on the validity of all of these assumptions. If just one essential assumption is incorrect, it will have detrimental effects throughout the entire system. For instance, assumptions made about the capabilities and limitations of future enemies relate directly to further assumptions about anticipated organizational and equipment changes in the Army.

These changes effect assignment of roles to sub-components of the Army, such as cavalry. Once lost through a decade of erosion, it is quite unlikely that it could be quickly and effectively

¹⁰⁵ A complete explanation of conducting analysis through a systems approach may be found in Senge, Peter M. *The Fifth Discipline*. (New York: Doubleday, 1990.) and Dörner, Dietrich. *The Logic of Failure*. Translated by Rita and Robert Kimber. (Cambridge, MA: Perseus Books, 1996.) Both Senge and Dörner highlight the importance of considering the unintended consequences of actions applied to complex systems or organizations. Both offer methodologies for assessing and identifying the potential second and third order effects of decisions applied to complex systems.

revived. The loss of such a capability is exceptionally worrisome if it is essential for battlefield success, as is the capability provided by cavalry organizations today. This chapter sought to analyze the Army's key assumptions related to the future of cavalry throughout the transformation and into the Objective Force.

These interconnected and inseparable assumptions involving the roles of cavalry hold the key to determining the future of cavalry organizations beyond the legacy and interim forces. The potential repercussions of these assumptions, as they could demonstrate a failure to learn from the past or contribute to a failure to anticipate or adapt to the future, effect the Army system and could lead to highly detrimental consequences in the future force.

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

And Moses sent them to spy out the land...Go and see whether the people who live there are strong or weak, see what the land is like...

-The Holy Bible, Numbers 13:17-18

The focus of this monograph has been to determine the future of cavalry in a transformed Army. The current plan for transformation of the United States Army and the concepts used as a framework for organizing and equipping it predict a significantly diminished role for the special purpose forces currently referred to as cavalry. It is believed that many of its traditional roles will be subsumed by the future general-purpose force while, “cavalry” is relegated to more passive functions of surveillance and target acquisition. These changes are based on a set of assumptions about the future threat and environment as well as revolutionary concepts on warfighting and advances in technological capabilities.

Analysis of the critical assumptions related to the functions and roles of cavalry provide significant areas of concern. While a few of the assumptions seem irrefutable others appear to dismiss logical, if not likely, possibilities. Transformation based on some of these narrowly focused predictions of the future present a real opportunity for military misfortune.

The consequences of military failure in future conflict are obviously dangerous and potentially catastrophic. Undoubtedly, these risks must be identified and viable remedies should be offered. Within the scope of this monograph, the opportunities for military failure based on the projected changes to the roles and functions of cavalry must be reviewed and mitigating options offered.

Avoiding Military Misfortune

A useful model for identifying the potential for military misfortune is the methodology offered by Eliot Cohen and John Gooch in their work *Military Misfortunes: The Anatomy of*

Failure in War.¹⁰⁶ The Cohen and Gooch Model analyzes military failure by identifying armies' inability to properly learn, anticipate and adapt. Accordingly, failure to properly do any one of these things can and normally does lead to military misfortune and often contributes directly to failure in other areas. Failure in more than one area causes complex or aggregate failure that in many cases leads to organizational deficiencies that are long term and difficult to correct. Failing to do all three usually causes a catastrophic military misfortune and can contribute directly to disasters that exceed the bounds of the military and have permanent national consequences. All military failures have the potential for extenuating consequences and much of the responsibility for preventing them resides in the military itself. Therefore, it is necessary to assess the potential for military failure in the Army's current transformation and identify viable preventative measures to preclude future military disasters.

Failure to Learn

According to Cohen and Gooch, failure to learn is one of the most common types of military failure. A learning failure is defined as an army's failure to absorb the readily accessible lessons of recent history.¹⁰⁷ Failures of this type have occurred relatively frequently in the past and threaten to reoccur in the future. The ongoing transformation in the US Army seems to provide another opportunity for a failure to learn. The analysis of the critical assumptions related to the future of cavalry highlights the current transformation's possible failure due to an overreliance on technology.

¹⁰⁶ For a detailed understanding of this methodology see Cohen, Eliot A. and John Gooch, *Military Misfortunes: The Anatomy of Failure in War*, (New York: Vintage Books, 1990.). On pages 26-27, Cohen and Gooch recognize three basic types of military failure: failure to learn, failure to anticipate and failure to adapt. A failure to learn is the result of failing to absorb readily available lessons in recent history. Failure to anticipate is an inability to foresee and act to deal with an enemy's move, or a likely response to a move of one's own. Adaptation failures occur when military's have an inability to cope with events as they unfold in the changing present. Failures of two or more of these types are considered *aggregate failure*, while simultaneous or sequential failure in all three areas is considered *catastrophic failure*.

¹⁰⁷ Ibid., p.26

Although the *Objective Force Concept* explicitly states, “Technology is not a panacea, and it brings its own set of unique challenges and vulnerabilities”¹⁰⁸ much of planned transfer of cavalry roles is inextricably linked to postulated technology. This dependence on unrealized technologies is manifested in the assumption that no future adversary will be able to gain technological parity with the US. Furthermore, these advances will provide dominant situational understanding capable of eliminating the need for using forces to execute security missions, serve as an economy of force or fight for information. Based on recent history, these assumptions that are rooted in technological answers to military problems, are invalid.¹⁰⁹

The opportunity for failure is accentuated by the assumption that future adversaries can not achieve technological parity nor develop technological countermeasures able to reduce the effectiveness of anticipated C4ISR systems. The idea that technological solutions are capable of providing all of the necessary answers to potential situations is contradicted by the Army’s own assumption that many of America’s potential adversaries will fight using asymmetric means and techniques that severely reduce the utility of high technology systems.¹¹⁰ These issues provide considerable potential for failure in the Objective Force and pose an even greater problem for the Interim Force.

The RSTA squadron of the Interim Force has been organized to operate using the expected, but not yet available, technologies capable of meeting the traditional cavalry roles in the Objective Force. Additionally, the organization is not equipped to fully execute these roles as legacy forces currently execute them. Based on experiences of the past, technology is unlikely to fully meet the mission requirements anticipated in the near future.

¹⁰⁸ United States Army White Paper, *Concepts for the Objective Force*, p.15

¹⁰⁹ Snow, Donald M., *Uncivil Wars*. (Boulder, CO: Lynne Rienner Publishers, Inc., 1996.), p.7. A similar belief was held by US forces in Vietnam where “in fact, computer-based wizardry...simply delude[d] its possessors into believing they [could] do things for which their prowess was irrelevant.”

¹¹⁰ See Poole, H. John, *Phantom Soldier: The Enemy’s Answer to U.S. Firepower*, (Emerald Isle, NC: Posterity Press, 2001.). Potential techniques offered in this work include subterranean basing and movement to defeat both electronic sensors and the effects of precision fires. Similar techniques were employed by the Vietnamese against France and the United States during the 1950s through the 1970s.

In the case of the United States Army's transformation and its decisions involving the future of cavalry a learning failure is becoming evident. The concepts for the Objective Force and the organization of its interim cavalry force seem to ignore the historical lessons learned on the limitations of technology in combat. The decisions being made based on this failure to learn, further increase the potential for other types of failure and their destructive combinations.

Failure to Anticipate

Another potentially critical failure is a failure to anticipate. Cohen and Gooch define this type of failure as an inability to properly predict and act to deal with potential adversaries' actions or their response to friendly actions.¹¹¹ The potential for this type of failure is evident in the Army's view of emerging threats and their capabilities as expressed in the *Future Operating Environment*.

A key assumption of the FOE, if proven wrong, provides a distinct possibility for resulting in a failure to anticipate. This vision of the future anticipates only one, very narrow view of the possible evolution of our potential adversaries. The *FOE* logically describes asymmetric reaction by small nation-states technologically less capable than America, but it fails to address how the United States would conceptually battle militaries that possess equally sophisticated systems. The *Objective Force Concept* boldly dismisses the notion of potential adversaries emerging from nations that could challenge the United States technologically within the foreseeable future. Undoubtedly, this technological capability is available to our current allies in Europe as well as Japan. Nations with large populations and rapidly emerging high technology sectors, such as India, provide another breeding ground for potential peer competitors.¹¹² Although a less likely

¹¹¹ Cohen and Gooch., p.27

¹¹² For further information on potential emergence of peer competitors to the United States see Szayna, Thomas S., et al. *The Emergence of Peer Competitors: A Framework for analysis*. (Arlington, VA: RAND Publishing, 2001.) and Kaplan, Robert D. *Warrior Politics: Why Leadership Demands a Pagan Ethos*. (New York: Random House, 2002.).

probability than the emergence of several less capable threats, the emergence of a peer competitor within a few decades remains a real possibility not addressed by the *FOE* or the *Objective Force Concept*.

This assumption that the US will maintain technological superiority over all potential adversaries is also reflected in the organization of Interim Force Cavalry units or RSTA squadrons. The reduced firepower and protection of the RSTA squadron, when compared to legacy force units, reflects a belief that technological superiority will overcome these shortcomings and the need to conduct traditional cavalry missions in a manner similar to the way they are conducted today. The elimination of specially trained and equipped forces to face equally equipped and skilled enemies may suffice if potential threats will always remain less capable. But, if the requirement is to man and equip a force necessary for operating across the entire spectrum of conflict and potential capabilities of adversaries such a decision could prove unfortunate. This would demonstrate a clear failure to anticipate the potential capabilities of future threats and, likewise prove to be an inappropriate reaction to their capabilities. A failure of this nature presents an even more dangerous situation than that of a failure to learn and significantly increases the opportunity for additional failure.

Failure to Adapt

A potentially more catastrophic type of military failure is the failure to adapt. Failure to adapt is considered an inability to handle the changing present and the related inability to make adjustments in a timely and effective manner.¹¹³ This type of failure is much more difficult to detect before it becomes a foregone conclusion. Nevertheless, the Army's current path of transformation provides clues to a possible failure to adapt.

The analysis of the assumptions related to the Objective Force Concept have the potential for resulting in an inability for the Army to adapt to unpredicted situations. The "overreliance" on

¹¹³ Cohen and Gooch., p.27.

technological means of reconnaissance and surveillance and the conscious decision to lightly arm interim cavalry forces may prove, in retrospect, as setting the conditions for significant failure. Were the IBCT to be deployed to a hostile theater with its RSTA squadron, as currently configured, the commander may be unable to employ the squadron in “traditional” cavalry roles. Even if the enemy situation demanded that the squadron fight for information or conduct a security mission against an adequately trained and equipped foe, the organization would be incapable without significant external augmentation. This augmentation would have to come from assets dedicated to other missions within the IBCT and therefore run contrary to the very definition of economy of force.

This situation described above is just one possibility where decisions made today effect, and ultimately limit, the options of tomorrow. The decision to limit the roles and functions of one type of organization while not adequately addressing their accomplishment throughout the force is dangerous. By further reducing the redundant capabilities to accomplish those tasks, the commander’s ability to effectively and quickly handle changes to the situation is diminished. The potential for a failure of adaptation increases.

Beyond the purely tactical potential for adaptation failure is the potential for force wide failure from lack of training and experience. The old saying goes, “Cavalry is not a branch, it is a state of mind.” While that may be so the training and development of cavalry soldiers, regardless of branch, is specialized and focused on their traditional roles. If these missions, such as “fighting for information” and security operations, are not trained and emphasized in the interim cavalry organizations they may be lost along the road to fielding the Objective Force. This situation can become critical if the future is significantly different than we assume or if our adversaries force us to adapt to meet unanticipated capabilities. Lack of experienced leadership and soldiers in the execution of specialized missions, like traditional cavalry roles, could easily contribute to an inability to properly adapt. Once experienced leaders are lost, attempting to adapt the force by recovering these skills will likely prove quite problematic.

Although military failure for the Objective Force is not a foregone conclusion, the potential for one or more types of failure is present. Failure in one area, be it learning, anticipation or adaptation, may not result in catastrophe. The combination of two or three types of failure greatly increases the opportunity for military disaster and related national crisis. The current *Objective Force Concept* and *Transformation Campaign Plan* display opportunities for military failure in all three domains. While the current transformation contains some potential for dangerous consequences, the course may be adjusted to reduce the opportunity for failure.

Course Adjustments

The enduring roles of cavalry remain as important to the force as a whole today as they have been throughout history. All indications are that they will remain just as relevant in the future. To ensure that these functions are effectively executed throughout the course of the transformation and meet the needs of field commanders during operations some adjustment will be necessary. These course adjustments must attempt to eliminate the potential for military misfortune by addressing the identified weaknesses in the current plan. They must also continue to leverage the benefits of emerging high technology advances so that credible lessons may be learned and included in the evolution of the *Objective Force Concept*. Colonel Kevin Benson stated in a recent article addressing the future of interim cavalry organizations:

Declared by act of Congress or not, the nation is at war. In light of this reality and compelling, changing threats to our nation, our Army, well underway in the process of transformation, must adapt transformation to the reality of a 'wartime Army.'¹¹⁴

In as much as the nation is involved in an unanticipated war, the interim cavalry force must now adapt to meet two objectives, continuing to serve as the bridge to the, as of yet,

¹¹⁴ Benson, Kevin C.M., Colonel, "Cavalry for the Interim Force, A Proposal for the 2d Cavalry Regiment". (Armor Magazine, January-February 2002, p.15-8.), p.15

undetermined Objective Force and serve as a fully functional cavalry organization today. That adaptation, in and of itself, will help to prevent the likelihood of military misfortune.

Ensuring that the interim cavalry force is able to conduct the full array of traditional cavalry roles requires increasing the organic firepower resident in the RSTA squadron's ground troops. This increase in firepower could be achieved by reorganizing the RSTA squadron ground troop along existing cavalry troop lines. Instead of adopting the "scout pure" organization currently in use, and formerly used and rejected by Division Cavalry Squadrons in the 1980s,¹¹⁵ RSTA troops should be organized with two scout platoons and two Medium Gun System "tank" platoons. Additionally, like legacy troops, the RSTA ground troops should have an organic mortar section. All of these systems are currently available in IAV variants. Furthermore, the cavalry version of the IAV should be equipped with a turret-mounted auto-cannon capable of providing both self-protection and a reconnaissance by fire capability to the scouts. Similar systems are currently in use by the Light Armored Reconnaissance units of the United States Marine Corps. The Marines are equipped with an earlier version of the Light Armored Vehicle (LAV) which provides the current chassis for the IAV. Adapting a like system to the newer version of the chassis should prove relatively easy and quick. These simple and comparatively small adaptations to the current RSTA organization have great potential.

These proposed changes to the RSTA organization offer an enhanced capability necessary for force requirements today and provide a consistent framework for the development of necessary lessons to bridge the gap between current capabilities and the desired force of the future. Increasing the organic fighting capability of the RSTA squadron allows the organization to meet the traditional cavalry roles still necessary today. Increasing the firepower of the RSTA squadron provides a significantly improved capability to perform aggressive reconnaissance, security

¹¹⁵ The Division Cavalry "J-Series" TO&E organized the squadron with three ground troops of three scout platoons each. This TO&E was common through armor and mechanized infantry divisions in the 1980s, but was replaced after Operation Desert Storm with a common troop design of two scout platoons and two tank platoons per troop.

missions and economy of force tasks while adhering to the CSA's mobility and deployment criteria. Furthermore, the doctrinal and organizational commonalities these changes would establish between Legacy forces and the Interim force provide a coherent framework for adaptation and force development. Cavalrymen will be able to move quickly and confidently between the Legacy and Interim Forces while learning lessons and applying evolving technologies to adapt the cavalry force. These changes would allow the cavalry force to evolve while ensuring that all cavalry forces are ready for combat and all cavalrymen adapt along with the force.

The Army has learned from the failures and successes of our predecessors. Finding the balance between being too bold and being too conservative is a daunting task. America's situation before September 11, 2001 provided plenty of opportunity for assuming an almost risk free course of boldness. Now that the nation is at war and our opportunity for low cost experimentation has been put on hold, a more conservative and proven course may be in order. Rather than shooting the old horse called cavalry, we may need to give her a new saddle and bit. While her day may pass, that day is not today.

GLOSSARY AND DEFINITION OF TERMS

C4ISR – Command, Control, Communications, Computers, Intelligence, Surveillance & Reconnaissance

Economy of Force – The allocation of minimum-essential combat capability or strength to secondary efforts so that forces may be concentrated in the area where a decision is sought. Economy of force is a principle of war and a condition of tactical operations. (FM 101-5-1)

Function – A task or set of actions necessary for the army, as a whole, to perform an operation or mission

General purpose – embodying the capabilities currently associated with multiple existing battalion sized maneuver units and task forces and conducts all types of operations—offensive, defensive, stability and support operations—at any point on the spectrum of conflict. (*Maneuver Unit of Action Concept*, 29 AUG 01).

Networked – interconnected, system to system through C4ISR, capable of sustaining positive and common informational interfaces. (*Maneuver Unit of Action Concept*, 29 AUG 01).

Reconnaissance – An operation designed to obtain information on the enemy, potential enemy, or the characteristics of a particular area. The precursor to all operations, which may be accomplished through passive surveillance, technical means, or human interaction, or through fighting for information. (FM 101-5-1)

Aggressive Reconnaissance – Fighting for information. A method of reconnaissance that avoids decisive engagement but prepares to fight, especially enemy security and reconnaissance forces, to gain information. This method does not have to be stealthy and may proceed at a faster pace. (FM 17-95).

Passive Reconnaissance – Reconnaissance by stealth. A method of reconnaissance that avoids physical contact with the enemy and gathers information by quiet, deliberate, dismounted techniques. Surveillance is the primary task performed. (FM 17-95).

Role – A function normally attributed to or the responsibility of a specific branch, arm or component of the army.

RSTA – Reconnaissance, Surveillance and Target Acquisition

Security Operations – Those operations designed to provide reaction time, maneuver space, and protection to the main body. Security operations are characterized by aggressive reconnaissance to reduce terrain and enemy unknowns, to gain and maintain contact with the enemy to ensure continuous information, and to provide early and accurate reporting of information to the protected force. Forms of security operations include screen, guard, cover and area security. Area security operations normally are associated with rear operations. Security operations orient on the main body and may orient in any direction from a stationary or moving force. (FM 101-501)

Situational Understanding – the cumulative effects derived from knowledgeable leaders and soldiers, and other revolutionary technologies that enable the Objective Force units to achieve the Quality of Firsts: see first, understand first, act first and finish decisively. (*Maneuver Unit of Action Concept*, 29 AUG 01).

System-of-Systems/Team-of-Teams – the design of tactical organizations from the small core team (for instance, the infantry fighting vehicle crew and infantry fire team) upward in a networked design that ensures team (collaborative) organizations that have no discernible points of failure. (*Maneuver Unit of Action Concept*, 29 AUG 01).

Unit of Action (UA) – standing organizations with organic capabilities based on battlefield functional areas (BFAs)—maneuver, fires and effects, maneuver support, maneuver sustainment, intelligence/surveillance/reconnaissance, etc.—represented today by echelons of sections through brigade. (*Maneuver Unit of Action Concept*, 29 AUG 01).

Unit of Employment (UE) – highly tailorable, higher-level echelons that integrate and synchronize Army forces in larger formations for full spectrum operations, linking ground forces to joint capabilities from battle to campaign level. (*Maneuver Unit of Action Concept*, 29 AUG 01).

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